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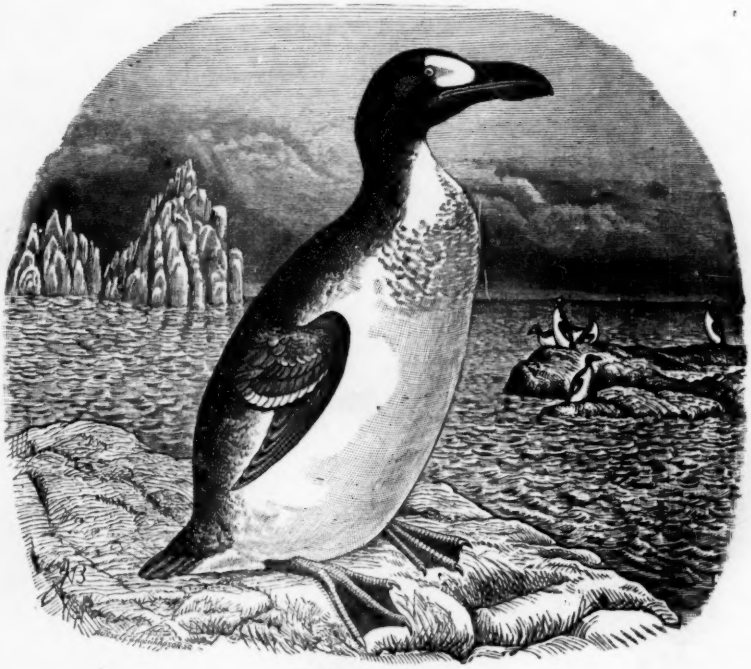

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THE 'BOOMING' OF THE BITTERN.

BY BRADFORD TORREY.

On the 30th of May last Mr. Walter Faxon and I spent the afternoon in some large meadows in Wayland, Massachusetts where we had the good fortune to witness the musical performances of *Botaurus lentiginosus* under peculiarly favorable conditions. These performances, highly curious in themselves, are not described, so far as I know, in any of our standard ornithological works. Audubon had never even heard them; and neither Wilson, Nuttall, Brewer, nor Coues,—nor any of their correspondents,—appears ever to have seen them. Clearly the Bittern's reputation as a recluse—a "shady character," as Dr. Coues calls him—is well deserved. Yet even he, it would seem, feels now and then an impulse to make a show. On the present occasion, at all events, he may fairly be said to have taken the platform; coming forth from his hiding-place amid the tall meadow grass, and whether he knew it or not, offering to a pair of inquisitive Yankees as protracted and open a view as they could have desired of his most intimate mysteries.

Our first bird, and principal performer, was a pumper, not a stake-driver; that is to say, his notes resembled precisely the noise of an old-fashioned wooden pump. We were on the railway, which runs through the meadow at an elevation of perhaps seven feet above it, and after listening to the bird for some time, and discussing between ourselves his probable distance from us, we walked up the track, hoping to locate the sound more definitely.

By and by this grew so near that we began to wonder whether we might not obtain a sight of its author. We swept the field with our opera-glasses, and presently descried the bird's head erect and motionless amidst the grass. Except for the eye, which we were near enough to see plainly, it might have been a stick. Soon it stirred, and then all at once the fellow commenced pumping. The action was only partially visible, of course; but after ti had been repeated several times, the Bittern started towards the remains of a last year's hay-cock, which was still high enough to be entirely above the grass, and while we held our breath he mounted it, looking furtively in all directions, and putting one foot before the other so slowly that we could barely see it move. It was an admirable display of one of the Bittern's most characteristic and useful accomplishments,—the art of imperceptible motion. He got fairly upon the hay at last, where we could see everything but his toes (these he obligingly showed us afterwards) and then he fell again to pumping, and kept at it for at least an hour. This operation, as well as I can put it into words, is as follows.

First the bird opens his bill quickly and shuts it with a click; then he does the same thing again, with a louder click; and after from three to five such snappings of the beak, he gives forth the familiar trisyllabic pumping notes, repeated from three to eight times. With the preliminary motions of the bill the breast is seen to be distending; the dilatation increases until the pumping is well under way, and as far as we could make out, does not subside in the least until the pumping is quite over. It seemed to both of us that the bird was swallowing air,—gulping it down,—and with it distending his crop; and he appeared not to be able to produce the resonant pumping notes until this was accomplished It should be remarked, however, that the gulps themselves, after the first one or two at least, gave rise to fainter sounds of much the same sort. The entire performance, but especially the pumping itself, is attended with violent convulsive movements, the head and neck being thrown upwards and then forwards,—like the Night Heron's when it emits its *quow*, only with much greater violence. The snap of the bill, in particular, is emphasized by a vigorous jerk of the head. The vocal result, as I say, is in three syllables; of these the first is the longest, and, as it were, a little divided from the others, while the third is almost like an echo of the second. The middle syllable is very strongly accented.

When our bird had been at work for perhaps half an hour a train of cars came along, and as we were sitting squarely upon the track, we of course had to move. This we thought would put an end to the show; but the Bittern held his ground, and as soon as the train had thundered by resumed his amusement, which looked, I am bound to say (and I doubt whether anybody could see it without receiving the same impression), unpleasantly like the contortions of a seasick patient. Between the acts he put himself into various positions; frequently assuming the humpbacked attitude in which the artists have commonly represented him; at other times raising his long neck straight into the air, his body with it, and standing as erect and statue-like as any soldier. Now he faced us; then he stood sidewise; and again he fairly turned his back on us. He was twelve and a half rods away, as nearly as we could tell by pacing; and our opera-glasses, magnifying three diameters, reduced the distance to about seventy feet, while the sun's position was such as to afford us every possible advantage.

This exhibition lasted for something more than an hour, after which the bird suddenly took wing, and flew down the meadow for a short distance, and on alighting in the grass pumped immediately! Within a few minutes he rose again, and again pumped instantly upon alighting. This I thought surprising, in view of the great exertion required, both in rising from the ground and in pumping; but it is, perhaps, analogous to the habit of smaller birds, who in times of excitement are given to breaking out into song the moment they strike the perch.

As we walked down the railroad, on our way back to the station, three Bitterns were in the air at once, and at the same moment a fourth was making music in the meadow on the other side of the track. One of the flying birds persistently let his legs dangle, instead of drawing them up behind him in the ordinary manner. He was high in the air, and I suspected was engaged in showing off, though I have never read of the Bittern's having any such custom.

The second musician, as good luck would have it, was a stake-driver. The imitation was as remarkable in this case as in the other, and the difference between the two performances was manifest instantly to both Mr. Faxon and myself. The middle syllable of the second bird was a veritable whack upon the head

of a stake. I have no difficulty whatever in crediting Mr. Samuels's statement that, on hearing it for the first time he supposed a woodman to be in the neighborhood, and discovered his error only after toiling through swamp and morass for half a mile. On this one point at least, it is easy to see why authors have disagreed. The fault has not been with the ears of the auditors, but with the notes of the different birds. Our stake-driver, however, like the pumper, made use of but three syllables, whatever Mr. Samuels's birds may have done, and the emphasis—the whack—was unmistakably upon the second.

In speculating upon the probable method by which these extraordinary sounds are produced, I have had in mind the following considerations:—

1. The quality of the notes,—resonant, yet curiously hollow and confined, as if emitted under water or under ground, as so many writers have taken for granted.

2. The distention of the breast, *not of the throat.*

3. The violent contortions of the bird.

4. The strong resemblance of the notes to pumping. This, it ought to be said for the benefit of readers who may never have heard them, is not a resemblance to the sounds occasioned by the giving forth of the water, but to those caused by the suction of the air in the tube before the water is brought up.

5. The similarity in kind between the full pumping notes and the fainter preceding ones.

6. The fact that when a man takes air into his stomach, as some men have the knack of doing, the act of gulping is accompanied by a sound extremely like the Bittern's, while the belching of the air out again is attended by a noise quite unlike any which the bird utters.

7. The fact that it is possible to imitate the Bittern's notes (in miniature, of course) by certain quick openings and shuttings of the lips, the breath meantime being inhaled. That this imitation is not imaginary I have satisfied myself by the following tests: First, I tried it upon Mr. Faxon himself, who pronounced it good as to tone and accent, and especially as to the echo-like effect of the final syllable. Then I tried it upon a man who had never heard the bird, and he exclaimed at once, "Why, that sounds like an old pump!"

In view of these things I am inclined to believe (I speak for

myself alone): 1st, that the sounds are not caused entirely by any ordinary exertion of the vocal organs, but are connected in some way with the distention of the crop. 2d (and somewhat less confidently), that they are produced by the drawing in of the breath, not by the giving of it forth, after the crop is full, the inhalations being attended by forcible openings and shuttings of the beak. That they are not produced under water, or with its help, is sufficiently evident from the fact that our bird remained upon the hay-cock throughout. His bill was never for an instant near any water.

During the hour or more that we sat upon the railway we had abundant opportunity to compare impressions; and among other things we debated how the notes to which we were listening could best be represented in writing. Neither of us hit upon anything satisfactory. Since then, however, Mr. Faxon has learned that the people of Wayland have a name for the bird (whether it is in use elsewhere I cannot say) which is most felicitously onomatopoetic; namely, *plum-pudd'n'*. I can imagine nothing better. Give both vowels the sound of *u* in *full*; dwell a little upon the *plum*; put a strong accent upon the first syllable of *pudd'n'*; especially keep the lips nearly closed throughout; and you have as good a representation of the Bittern's notes, I think, as can well be put into letters.*

The preliminary clicking of the bill, mentioned above, is doubtless the noise that Naumann heard from the European Bittern, without suspecting how it was made. When he got close enough, he says, he sometimes heard a low sound precede the bellow, "as if the surface of the water had been beaten with a reed." Thoreau heard it also, at least on one occasion. He writes in his journal†:

"The stake driver is at it in his favorite meadow. I followed the sound, and at last got within two rods. When thus near, I heard some lower sounds at the beginning like striking on a stump or a stake, a dry, hard sound, and then followed the gurgling, pumping notes fit to come from a meadow. This was just within

* I am aware, of course, that Nuttall and nearly or quite everybody else who has ever described or written the notes, has placed the accent upon the last syllable. Why there should be this discrepancy is to me inexplicable; but there is no point to which Mr. Faxon and I have attended with more carefulness, both on the day in question and since, and there is none on which we are more fully agreed.

† Summer, p. 193.

the blueberry and other bushes, and when the bird flew up alarmed, I went to the place, but could see no water, which makes me doubt if water is necessary to it in making the sound. Perhaps it thrusts its bill so deep as to reach water where it is dry on the surface."

This notion that water is somehow employed in the formation of the sounds seems always to have been pretty general, although Sir Thomas Brown, whose 'Pseudodoxia Epidemica' was published in 1646, treats it even then as a vulgar error. He says*: "That a bittor maketh that mugient noise, or as we term it, bumping, by putting its bill into a reed, as most believe, or as Bellonius and Aldrovandus conceive, by putting the same in mud or water, and after awhile retaining the air by suddenly excluding it again, is not so easily made out. For my own part, though after diligent inquiry, I could never behold them in this motion. Notwithstanding, by others whose observations we have expressly requested, we are informed that some have beheld them making this noise on the shore, their bills being far enough removed from reed or water; that is, first strongly attracting the air, and unto a manifest distention of the neck, and presently after, with great contention and violence excluding the same again."†

The only American author who has treated the subject as an eye-witness, so far as I can learn, is Dr. C. C. Abbott,‡ and his account of the *action* of the bird is limited to a single sentence. "In this case," he says, "the bird's beak, when it uttered the cry, was not quite withdrawn from the water, and its voice, therefore, was materially modified by this fact"! He makes no allusion to any motion of the head, nor to the inflation of the breast, although the bird was "within ten paces."§

* Book III, Chap. XXVII, 4. For this reference, as well as for much else, I am indebted to the kindness of Mr. Faxon.

† Upon the point of the similarity between the notes of *Botaurus lentiginosus* and those of *B. stellaris* the only direct testimony I have seen is that of Nuttall and Sir John Richardson, two Englishmen who may be presumed to have heard both birds. Nuttall says (Water Birds, p. 61): "Instead of the *bump* or *boomp* of the true Bittern, their call is something like the uncouth syllables '*pump-au-gah*, but uttered in the same low, bellowing tone." Richardson's words are (Fauna Boreali-Americana, Pt. II, p. 374): "Its loud booming, exactly resembling that of the common Bittern of Europe."

‡ 'Waste-Land Wanderings,' p. 130.

§ A much more circumstantial though not altogether intelligible description is furnished by Count Wodzicki, in 'Naumannia,' Vol. II, Part II, p. 48, 1852. The bird, of course, is *B. stellaris*. "I saw the female ten paces from the male standing in shallow

Some years ago Mr. William Brewster mentioned to me that he had once detected a Bittern in the act of pumping; and whilst preparing this article I wrote to him requesting some account of the matter. This he has very kindly sent me, and I conclude my paper with his note. His observations, so far as they go, will be seen to confirm those of Mr. Faxon and myself in all essential particulars.

"The only occasion when I have actually seen the Bittern 'pump' was in Rock Meadow, Belmont, Mass., May 16, 1868. The bird was well out in the open meadow among short, green grass growing in perhaps two inches of surface water. I got within less than thirty yards of him before he took alarm and crouched. Previous to this he favored me with several performances in plain sight. He would extend his neck, then drawing in his head suddenly, would throw it out with a jerk as if he were afflicted with violent nausea or were trying to get rid of some obstruction in his throat, at the same time uttering the peculiar *pump-er-lunk*. After repeating the movement and its accompanying vocal notes several times in rather quick succession, he would stand nearly erect for a few moments before beginning again. As he stood with his back partly towards me I could not see his breast or throat distinctly, but I am sure he did not fill the latter with water while I was watching him, for not once did his bill descend low enough to get even a hurried sip."

"You are heartily welcome to make any use you see fit of the above. I am sorry it is so meagre, but I was too untrained an observer at the time to take very full notes, and twenty years is a long time to send the memory back. What little I have said, however, is, I am sure, a correct description of the episode."

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water, with neck drawn in and crop inflated, in a *dolce far niente*, like a Florentine *dilettante* who in half-slumber listens to the most beautiful melody. This enraptured female with half-closed eyes had good cause to admire her richly gifted *virtuoso*, for he was a *basso* like Lablache. The artist was standing on both feet, his body horizontal and his bill in the water, and then a rumbling began, the water spirting about all the time. After a few sounds I heard the *ü* of Naumann; the bird lifted his head, threw it backward, and thrust his bill into the water, and then he uttered a roar so fearfully loud that I was frightened. This explained why some notes, which are heard but seldom and only at the beginning, sound so loud: they are those that the bittern produces when he has taken the water deep into the neck and throws it out with unusual force. The music went on, but the bird no longer threw his head backward, and I heard these loud sounds no more." I make no comments upon this narrative, being entirely at a loss what to say. An extract from it will be found in the 'Standard Natural History,' Vol. IV, p. 176.

NOTE.—Since the foregoing paper was written I have learned, through the courtesy of Dr. Stejneger, that Mr. Frank H. Nutter contributed an account of the Bittern's pumping to the 'Oölogist's Exchange' for April, 1888 (Vol. I, No. 4). I subjoin it in full.

"By the way, did you ever see a Bittern while engaged in its serenade? It is a ludicrous performance. One favored me with it once within easy range of my telescope. After standing in a meditative position for some time it would slowly raise its head and stretch up its neck till its bill pointed nearly straight upwards, when it commenced by several times opening and shutting its big beak with a snap that was plainly heard, though five or six hundred feet distant; it then uttered the characteristic notes from which it takes its common name of 'stake-driver' or 'thunder-pumper'; and truly it seems much like pumping, for each syllable seems to originate deep in the interior of the bird and to be ejected only with the greatest muscular exertion, puffing out its feathers and working its long neck up and down, as if choking to death. After a short season of meditation to recuperate its strength, the performance is again repeated, and doubtless to its mate, engaged in her maternal duties, it is the sweetest of music."

THE MAIN DIVISIONS OF THE SWIFTS.

BY FREDERIC A. LUCAS.

SINCE Dr. Sclater's paper on the genera and species of Swift (P. Z. S., 1865, pp. 593-617) they have been allowed to remain in the two subfamilies, Cypselinæ and Chæturinæ, into which he there divides this group. Dr. Sclater's divisions are founded solely on external characters, and he is very careful to state that he has paid but little attention to the species of the genera *Collocalia* and *Dendrochelidon*. In a footnote Dr. Sclater refers to a paper by Dr. Bernstein (Acta Academiæ Leopoldino-Carolinæ, Vol. 26, p. 15) as showing conclusively that *Collocalia* is in every point of view strictly Cypseline, and most nearly allied to *Dendrochelidon*. While I have not read Dr. Bernstein's paper

it is impossible for me to coincide in his view of the relationship of *Collocalia*, although fully agreeing with him in regard to its being in every point strictly Cypseline. *Collocalia*, for whose skeleton I am indebted to my friend Mr. C. F. Adams, is a member of the Chæturine group of Swifts, and so nearly resembles in structure our common Chimney Swift that it would be difficult on structural grounds to separate them generically.

The members of the genus *Dendrochelidon* on the other hand stand by themselves among the Swifts, the characters separating them from their relatives, as represented by *Micropus apus*, *M. subfurcatus*, *Panyptila saxatilis*, *Chætura pelagica*, and *Collocalia fuciphaga* are well marked. An entire skeleton of *Dendrochelidon* is unfortunately not at hand, but Prof. Alfred Newton has most kindly loaned me a skull and sternum of *D. mystacea* and two sterna of *D. wallacei*, which with some wing and leg bones furnish an abundance of good differential characters.* The skull alone would be quite sufficient to separate *Dendrochelidon* from the other Swifts and the other bones furnish strong corroborative testimony.

Viewing the cranium of *Dendrochelidon* from its dorsal aspect, the rostral portion is seen to be both narrower and longer than in either *Micropus*, *Panyptila*, *Chætura*, or *Collocalia*. The mass of the ecto-ethmoid, so prominent in other Swifts, does not project beyond the outline of the frontals. There is no lachrymal in any of the skulls of *Dendrochelidon* at my disposal, though this little bone is present in *Micropus subfurcatus* and *Collocalia fuciphaga*.

A decided structural difference exists between *Dendrochelidon* and the other Swifts in the frontal region from the fact that in *Dendrochelidon* the nasals are posteriorly narrow, and simply abut against the frontals, while in the other Swifts an external process of the wide nasals is carried upward and backward, overlying the frontals. In this respect the adult *Dendrochelidon* much resembles the younger stages of other Swifts, in which the external and internal processes of the nasal ossify first, forming a crescentic bar of bone bounding the nasal opening. Later on the ascending process ossifies, forming a tri-radiate bone, extremely well marked in *Panyptila*. The interorbital portion of the frontals

*See, however, foot-note on page 11.

is comparatively wide, slightly suggesting *Caprimulgus* in its outline. Viewed from below the elongation of the rostrum is very noticeable while the pre-maxillaries are seen to run well backward, thus contrasting with the other Swifts and once more suggesting *Caprimulgus*.

Dendrochelidon has the characteristic unciform maxillo-palatines of the Swifts, but the palatines and vomer differ totally from the Cypseline pattern. The pre-palatine bar is narrow, instead of wide, the external palatine notch is wanting, and the trans-palatine portion is entirely different in shape from that of the other Swifts, being not unlike *Caprimulgus*. The anteriorly T-shaped vomer of the other Swifts is replaced by a vomer that is scarcely expanded at all distally.

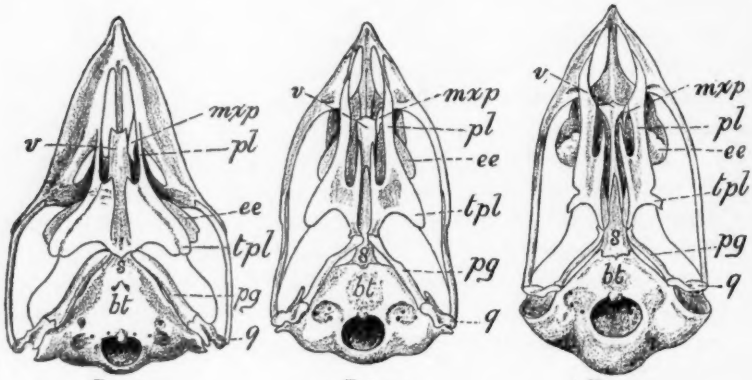

FIG. 1. FIG. 2. FIG. 3.

Ventral aspect of crania of 1. *Antrostomus vociferus*, 2. *Dendrochelidon mystacea*, 3. *Chætura pelagica*, all enlarged to the same absolute size.

v, vomer; *mxp*, maxillo-palatine; *pl*, prepalatine; *ee*, ecto-ethmoid; *tpl*, trans-palatine; *pg*, pterygoid; *q*, quadrate; *s*, sphenoid; *bt*, basi-temporal.

One maxillo-palatine is omitted to better show the vomer.

Owing to foreshortening the length of the rostral portion of the skull of *Dendrochelidon* is apparently not so great as it is in reality.

The sphenoid of *Dendrochelidon* partakes of the general elongation of the skull, and the articulations of the pterygoids with the sphenoid are brought well forward, and form a rather sharp angle with one another. This is a departure from the Cypseline structure, in which the pterygoids are closely applied to the basi-temporal, and a step toward the Passerine arrangement.

While retaining the general characters of the Swifts, the shoulder girdle of *Dendrochelidon* departs widely from the typical Cypseline pattern. The xiphoid margin of the sternum instead of being convex is slightly concave, and instead of being imperforate presents on either side a subtriangular fenestra occupying the place of the notch found in Passerine birds. These fenestræ are not to be confounded with the sternal vacuities so constantly found in the Swifts, for large, irregular fenestræ are present in the body of the sternum; but the marginal fenestræ are such as would be formed were the external xiphoid process of a Passerine bird united with the body of the sternum by a bar of bone. The outline of the carina is more convex than in any of the other Swifts, and recalls the Caprimulgine sternum.

The coracoid is moderately long, much longer than in any of the allied forms, its length, in comparison with the total length of the sternum, being $\frac{67}{100}$ in *D. wallacei*, and $\frac{72}{100}$ *in D. mystacea*, while in *Micropus apus* it is $\frac{52}{100}$, in *Collocalia fuciphaga* $\frac{52}{100}$, and in *Chætura pelagica* $\frac{50}{100}$. The furcula is also longer and the hypoclidium better developed than in other Swifts, the furcula resting upon the anterior edge of the carina. The scapula is more decurved than in any other Swift except *Collocalia*, but experience with other forms shows that the scapula has but slight taxonomic value.

Unfortunately there is no humerus among the bones in my possession, but from the proportions of the other bones of the wing it would not be surprising if the humerus should prove to be longer and less strongly marked than the usual Cypseline pattern.* The radius and ulna, instead of being considerably shorter than the second metacarpal, are considerably longer, while they are also more concave toward one another than in other Swifts. The

*Since the above was written, Dr. W. K. Parker has very kindly sent me for examination a skeleton of *D. coronata*. This corresponds in the respective portions of its skeleton with the species already examined, while the humerus proves to be as surmised, much more slender and much less rugose than in the other Swifts.

The differences of proportional length between the wing bones of *Micropus apus* and *Dendrochelidon mystacea* can be well expressed in figures by calling the length of the metacarpals 100.

They are as follows:

	M. apus.	*D. mystacea.*	*Chætura.*	*Collocalia.*
Metacarpals	100	100	100	100
Radius	76	110	75	88
Humerus	56	95	60	63

'tarsus' is much shorter and wider in *Dendrochelidon* than in any of its relatives, and the anterior and posterior surfaces instead of being deeply grooved for the reception of tendons are decidedly convex. The first metatarsal is well developed and is placed well up on the 'tarsus,' the ungual phalanges are not of the regular Cypseline pattern, and the phalanges, within the penultimate, instead of being short or obsolete are moderately long. Finally the 'tarsus' is shorter than even the first digit, while in all other Swifts it is longer, notably so in *Chætura*.

From the preceding notes it may be seen that marked differences separate the genus *Dendrochelidon* from the other Swifts, while in some points it seems to incline towards the Goatsuckers. Some of the distinctions existing between *Dendrochelidon* and the other Swifts are merely differences of degree, but others are differences of kind, so that *Dendrochelidon* not only differs from its relatives, but possesses structural characters of its own that appear quite equal to those of the rest of the Swifts combined. These differential characters are greater than those existing between the Thrushes and the Wrens, or even, I should say, between the Crows and the Swallows, so that although the material at hand is small, it is quite sufficient to warrant the formation of a new family for the members of the genus *Dendrochelidon*. The name proposed for this family is *Dendrochelidonidæ*.

The precise status of the Swifts may well be called a little uncertain, although the tendency certainly is to consider them as an order. Mr. Gill's term of super-family has been applied to the Swifts by Mr. L. Stejneger and may safely be used. Osteologically the group may be diagnosed as follows.

Super-family MICROPODOIDEA.

Palate ægithognathous; maxillo-palatines unciform; manubrium rudimentary; xiphoid margin of sternum entire, costal process small; coracoid short, not implanted in a groove, epi-coracoid feebly developed; furcula widely U-shaped, hypoclidium small, epiclidium obsolete.

The two families into which this super-family is divided may be differentiated as follows.

	Micropodidæ.	*Dendrochelidonidæ.*
Rostral portion of cranium	broad;	moderate.
Nasals	tri-radiate, overlapping frontals;	forked, abutting against frontals.
Ecto-ethmoid	wide;	narrow.
Vomer	anteriorly much expanded, T-shaped;	scarcely expanded.
Palatines	exteriorly notched;	unnotched.
Posterior margin of sternum	convex, imperforate;	slightly concave, with two foramina.
Tarsus	longer than first digit;	shorter than first digit.
Ulna	shorter than second metacarpal;	longer than second metacarpal.
Phalanges	except ultimate and penultimate, very short or obsolete;	not shortened.

The *Micropodidæ* apparently fall into two groups according to the development of their phalanges: *Micropodinæ*.—Number of phalanges 2, 3, 3, 3. *Chæturinæ*.—Number of phalanges 2, 3, 4, 5.

It is my earnest desire, at some future day, to treat of the Swifts in greater detail, but osteological material is very difficult to procure, and at present the matter must rest. I should be very grateful for any assistance in this respect, and in closing desire to express my thanks to Mr. Adams, Dr. Baur, Dr. Mearns, Dr. W. K. Parker, and Professor Newton for their kindness in providing me with the material on which this paper is based.

A SUMMARY OF OBSERVATIONS ON THE BIRDS OF THE GULF COAST OF FLORIDA.

BY W. E. D. SCOTT.

(*Continued from p. 379.*)

Phœnicopterus ruber. AMERICAN FLAMINGO.—This species was of regular though rare occurrence as as ummer migrant as far north as Tampa Bay. The last birds killed there were four in number, all but one immature, in the year 1885, by Mr. Stuart of Tampa.

Of late years the birds have been so persistently persecuted in the region between Cape Romano and Cape Sable, and north from the former point to Sanibel Inlet, that they are now rare even at those points, though ten years ago resident there and not at all uncommon. Mr. Atkins while at Punta Rassa in 1885 and 1886 obtained several authentic records of the occurence of the Flamingo in that region.

Some four years ago a party of 'plume hunters,' I am most credibly informed, killed in a single season, and during a single expedition after plumes a large number of these remarkable and beautifully colored birds. This was the main flock, and was well known to the spongers and other frequenters of the coast, in the region about Cape Romano. It seems, from information that I can gather, that the Flamingoes bred somewhere between Cape Romano and Cape Sable and south of that point quite recently, that is within five years, and a few may still find a nesting-ground on the Gulf Coast as numbers are seen every season, though the birds are not nearly as common as they once were and have become very shy from the repeated attacks upon them.

Ajaja ajaja. ROSEATE SPOONBILL.—The record in regard to the species in question is even more shocking than that of the Flamingo. The Roseate Spoonbill was ten years ago an *abundant* bird on the Gulf Coast of Florida, as far north at least as the mouth of the Anclote River. The birds bred in enormous rookeries in the region about Cape Romano and to the south of that point. These rookeries have been described to me by men who helped to destroy them, as being frequently of many acres in extent and affording breeding ground to thousands of Roseate Spoonbills. The birds bred in January and were in the best plumage late in November and in December. They do not seem to have bred north of Charlotte Harbor, so far as I am able to ascertain, but immediately after the breeding season was finished, and as soon as the young were able to shift for themselves, there was a great dispersal of the birds to the northward, particularly along the coast, though they were common at points in the interior.

As late as the season of 1880 in March I found the birds in great numbers at all the points I visited south of the mouth of the Anclote River, and even north of that point they were of occasional occurrence. In Old Tampa Bay and at John's Pass in March of the year in question I saw the birds daily and once at least two hundred alighted on a sandbar where I was watching some Peale's Egrets (*Ardea rufescens*) and were so tame and unsuspicious that I approached within twenty feet before they flew, and the flight was only for a short distance when they again alighted.

All this is changed. I have spent the past four winters and two summers in Florida. My old hunting grounds have all been carefully retraversed, some of them many times, and the Roseate Spoonbill is almost as great a stranger to me as to my fellow workers who live the year round in Massachusetts.

I have seen two near Tarpon in all the time referred to, about a dozen once on Old Tampa Bay, and during my trip to Charlotte Harbor in 1886

perhaps twenty in all. They were in every case so wild and frightened at the *sight* of a human being that the only way one could identify them was by the wonderful blush pink of their feathers in the light.

I am firmly convinced that this change is directly attributable to the demands of the feather market for the skins of these gorgeous birds, and feel sure that it is only the question of a few more seasons of 'plume hunters' when this species will be almost as mythical in Florida, as the traditional Phœnix

Guara alba. WHITE IBIS.—An abundant resident at most points on the Gulf Coast, but apparently preferring the fresh-water regions, especially in the breeding season, though I have frequently found them in rookeries, associated with various Herons, Cormorants, etc., where the water was brackish.

For many years the southeastern end of Lake Butler, near Tarpon Springs, has been a favorite breeding place for these birds, and I found vast numbers of them breeding there in April of the present year (1888). The nests were similar to those of the smaller Herons, which were also breeding abundantly at this point, except that they were lined with leaves and were more carefully built. Four eggs were generally the number of a full set, though once I found five in the same nest, and three were now and then the full number. The eggs were mostly laid, and had been incubated from a day or two to a week, when I visited the rookery on April 24, 1888.

These birds I found equally common at Panasoffkee Lake, the points visited on the Withlacooche River, and at many points in Charlotte Harbor and Tampa Bay.

Guara rubra. SCARLET IBIS.—Mr. Atkins of Key West writes me under date July 21, 1888, "I enclose the letter referring to the [Scarlet] Ibis. Mr. Hart is, to the best of my knowledge and belief, a truthful and reliable man and I have not the least doubt of what he writes in regard to the [Scarlet] Ibis."

The following I quote from this letter of Mr. T. E. Hart to Mr. Atkins, dated from Fort Ogden, Florida, May 13, 1888.

"I have done very well collecting plumes this season, but have not made a skin this year; have seen some fine Everglade Kites and Spoonbills and Rails, but was a long way from the boat and could not pack them; saw one Scarlet Ibis but did not shoot it. I was in a Heron rookery and saw it coming and thought it was a young White Ibis as its color was hid by the tops of the trees. I kept watching it coming along and when it got to an open place it hovered for a moment, and before I could shoot it, it dashed off at a right angle and I saw it no more. Joe saw one the same day. I could not have been mistaken in the bird. It was of the size and shape you wrote and was of a *dark* blood color. It was not more than sixty feet from me and was a perfect beauty."

I have perfect confidence in the above records and present them without hesitation as being of deep interest.

Plegadis autumnalis. GLOSSY IBIS.—Apparently rare on the Gulf

Coast. The only records I have are two birds, sex unknown, taken at Fort Meyers, on the Caloosahatchie River, in the spring of 1886. These two are in my collection and are numbered 5244 and 5245.

The local hunters in Hillsboro and Hernando Counties do not seem to have any knowledge of "Copper-colored Curlews," except such of the hunters as have travelled in the southern portion of the State.

Tantalus loculator. WOOD IBIS.—Common resident and frequents the cypress ponds, small streams, and rivers. It is rarely to be found on or close to salt water. Mr. Stuart of Tampa told me that several hundred of these birds bred in a rookery about eight miles from Tampa as recently as the spring of 1885. The breeding season was at its height about the last of March. This rookery has been broken up by local hunters and no birds breed there now, nor have I met with the species nesting in Florida.

Botaurus lentiginosus. AMERICAN BITTERN.—A rare summer resident but abundant at certain points in the autumn, winter, and spring. I have no record of the species breeding in Florida, but meet with the birds now and then throughout the warm months.

Botaurus exilis. LEAST BITTERN.—Common resident. Many breed both in the fresh and salt water marshes, though the former seem to be preferred.

The breeding season in the region about Tarpon Springs is in May and is completed, the young birds being able to fly, by the last of June, or first week in July.

Ardea occidentalis. GREAT WHITE HERON.—The regions between Cape Romano and Cape Sable and to the south of the latter point seem the localities preferred by this species, and here they are resident and breed. The breeding season is said to be in December and January. Mr. Atkins has kindly given me numerous records of their occurrence at Key West, and I have a note of one seen at the mouth of the Anclote River in April, 1887.

Ardea wuerdemanni. WÜRDEMANN'S HERON.—Mr. Stuart of Tampa has collected between Capes Romano and Sable some ten or more individuals of this species which I have personally seen. Most of these were in the colored phase and presented considerable individual variation, the details of which I am unable to place on record here, as I put off taking notes in this matter, being hurried at the time of my visit, and since then these valuable birds with many others have been destroyed by fire. Two of Mr. Stuart's birds were in the white phase, being pure white everywhere except on the last two or three inches of the their outer primaries, which were in color blue and marked much like the primary quills of *Ardea cærulea* in its white phase of plumage.

For the notes I have on the breeding of this species, I am indebted to Mr. Stuart, who kindly placed them at my disposal. Mr. Stuart started in the early part of November, 1886, for the region alluded to above, and found Würdemann's Heron breeding at that season. Some of the birds had eggs in their nests, and some had young almost ready to fly so that it is fair to presume that the birds begin to breed about October 1. The

birds were solitary in their nesting habits, and not at all common, and very shy. Mr. Stuart described the half-grown young to me as similar to those of *A. wardi* of a like age, but as he did not appreciate their value, he preserved no skins of them.

I wish to allude in this connection to a bird which I took near Tarpon Springs on July 31, 1886. With some hesitancy, I am obliged to consider the specimen in question, No. 5305 of my collection, an adult male in worn full plumage, as a hybrid between Würdemann's and Ward's Heron. It is of a considerably lighter and more smoke-colored blue than any Ward's Heron which I have. It has the decidedly white underparts streaked with black, and dusky gray and even rusty color characteristic of *wuerdemanni*. The crown patch from the forehead is streaked with bluish dusky. The plumes of the lower neck are almost pure white. There are so many characters of Würdemann's and Ward's Heron combined in this bird, that this seems the only reasonable category to place it in, at least till we have further light on the subject.

Ardea wardi. WARD'S HERON.—For recent remarks on this species I refer the reader to 'The Auk' of April, 1888, pp. 183–184.

I have before me a series of some thirty Ward's Herons in all stages from the fledgling birds taken from the nest to those in full adult breeding plumage. Of the latter, there are nineteen in number, and it is my purpose to give a slight summary of certain features said to characterize this species. *All* of these nineteen birds are in *very fine, unworn, adult plumage*, they having been taken at the beginning of the breeding season. Eleven of them, without any apparent correlation to sex, have the crown patch streaked and suffused with bluish black or bluish brown. Eight have the crown patch untinged and pure white. In the eleven that have the crown patch streaked, there is every degree of variation presented from an almost obscured crown patch to one only faintly streaked or suffused. This streaking or suffusion usually begins on the forehead and extends for a greater or less distance backwards till lost in the white of the extremity of the crown patch. A very considerable percentage have some of the long occipital plumes not wholly black, but blue or whitish. Of the nineteen birds in question only *three* have pure *black shoulder-knots*, and the other *sixteen* present every phase between shoulder-knots slightly streaked with white to those heavily and conspicuously striped with that color. There is also a very considerable individual variation in the relative amounts of white and black on the underparts of these nineteen birds. These points have been briefly noticed to show what a wide range of variation these birds have in the coloration of special parts, and as conflicting somewhat with recent descriptions.

Mr. Atkins has found the species not infrequently at Key West and has lately sent me a young bird of the year from that point, indicating its breeding at or near that island.

Ardea egretta. AMERICAN EGRET.—A rather common resident, though not nearly so abundant as in former years. Breeds, according to locality and range, from late in January till June and even July.

Ardea candidissima. SNOWY HERON.—A common resident and once abundant, but it has been so systematically persecuted and destroyed that it is yearly becoming more rare. It breeds, according to locality, from early in March till late in June. It is particularly difficult to give accurate data as to the natural breeding time of this and others of the smaller Herons, for they are hunted just during the period of the full perfection of the plumes with such unremitting perseverance by the cruel plume hunters that scarcely a 'rookery,' no matter how small, escapes. So that the poor survivors of these massacres are constantly seeking new nesting grounds, and I have found Herons about Tarpon Springs and other points, breeding *late in August*, and this species, *A. cærulea*, and *A. tricolor ruficollis* had *fresh eggs* as late as the 15th of that month.

Ardea rufescens. REDDISH EGRET.—Locally this bird is still common. The breeding season begins late in March in Old Tampa Bay, and is at its height by the middle of April. These birds, so far as I am aware, always breed in rookeries where the adjacent waters are salt, and I have never seen them frequent the fresh water ponds even to feed.

Mr. John W. Atkins, of Key West, tells me in a recent letter that the dark phase of plumage is the commoner of the two at that locality, though he constantly sees the white phase as well, and he believes the birds breed on the islands. For further remarks on this species the reader is referred to 'The Auk,' April, 1888, p. 184. I am indebted to a friend in this locality for the information that this species in its dark phase still breeds in numbers at rookeries at St. Martin's Keys, about forty-five miles north of Tarpon Springs, in the Gulf.

Ardea tricolor ruficollis. LOUISIANA HERON.—The most common of all the Herons, frequenting both salt and fresh water. The breeding season begins about the same time of the year as the last.

Ardea cœrulea. LITTLE BLUE HERON.—Still a common species. Frequents both fresh and salt water, but there seems to be a preference for the former. Breeds in the vicinity of Tarpon Springs from early in April to late in August. See, in this connection, the remarks on the breeding of *A. candidissima*, which also refer to this species.

Ardea virescens. GREEN HERON.—Common, but not so gregarious as the several preceding species. Resident and breeds, generally in the vicinity of fresh water ponds. Breeds from late in April to July, in the vicinity of Tarpon Springs.

Nycticorax nycticorax nævius. BLACK-CROWNED NIGHT HERON.—Rather common resident, and some breed.

Nycticorax violaceus. YELLOW-CROWNED NIGHT HERON.—Common locally. Breeds in May and June about Tarpon Springs.

[*To be continued.*]

AN ACCOUNT OF THE BREEDING HABITS OF *PUFFINUS AUDUBONI* IN THE ISLAND OF GRENADA, WEST INDIES, WITH A NOTE ON *ZENAIDA RUBRIPES*.

BY GEORGE N. LAWRENCE.

I HAVE received a letter from Mr. John G. Wells in which he writes as follows: "I had an outing on Easter Monday, and was fortunate enough to procure a bird new to our fauna, a description of which I enclose, and skins go by book post, which I trust will reach you safely, and that I shall soon have the pleasure of reading your decision on them."

The birds sent proved to be *Puffinus auduboni*. The following letter from Mr. Wells, dated Grenada, April 23, 1888, gives an account of his finding and procuring specimens of it while breeding, and also some facts connected with its life history.

"About eight or ten years ago numbers of dried birds used to be brought in to the market at Greenville for sale; they were young birds and very fat. The men who sold them said they were the young of the 'Diablotin,' and were caught in holes, on a small island to the eastward called Mouchoir Quarré. I endeavored to procure a live one but without avail, and in fact so many improbable stories were told concerning this bird, that I looked upon the 'Diablotin' as a myth, and concluded that the dried birds were the young of some species of Gull. My interest in the matter has, however, been recently revived. On Easter Monday last (2nd April, 1888) I paid a visit to a small islet called Labaye Rock, about a mile off the Port of Greenville, a place where I had been on many previous occasions. On exploring the Rock, a young bird was discovered in a hole under a stone; it was covered with down; in fact it seemed like a ball of fat enclosed in down. One of the boatmen pronounced it to be a young 'Diablotin'; this, as you may suppose, caused me to make a thorough search, with the happy result that I found an adult bird with a young one in one hole, and a full-grown female and one egg in another hole. The birds on being brought out into the light appeared to be quite foolish, and beyond a feeble attempt to bite seemed to make no effort to escape. I kept them alive for some days; they would take no food during the day, remaining perfectly quiet, but at night they fed on scraps of fish, and at intervals uttered a peculiar cry resembling a cat howl.

"They evidently lay but one egg, as only one young was found in each hole, and the egg which I got was highly incubated; it is of a dull white color and measures $2'' \times 1\frac{3}{8}''$.

"The name 'Diablotin' in this case is not to be depended upon, as the fishermen and boatmen about here seem to apply that name to any strange sea bird which they meet.

"The bird appears to be a Petrel, perhaps a well-known species, but it is new to me, and I believe has not been noted from this island. I send you by book post the skins of an adult female and the young bird found in the same hole."

Dr. Henry Bryant found it to be abundant in the Bahamas. His accounts of its breeding and of the size of the egg agree closely with that given by Mr. Wells. It appears to be also quite common in Bermuda, and several accounts of its capture there while breeding, may be found in Baird, Brewer and Ridgway (Water Birds of N. A., Vol. II).

The general coloring of the nestling sent by Mr. Wells is dusky gray, whitish on the abdomen. It seems large for a bird in its downy stage of plumage, measuring $9\frac{3}{4}$ inches in length. The adult measures in length (fresh) $13\frac{1}{2}$ inches; in 'Water Birds of North America' it is stated to be about 11 inches.

These specimens are in the National Museum.

The 'Diablotin' formerly inhabiting the Island of Guadeloupe, W. I., of which a very full history is given by Père Labat, in his 'Voyage aux Isles de l'Amerique,' published in 1724, and comprising seven quarto pages, was a very different bird. It has been considered extinct there for a long time, and I think has not been satisfactorily identified with any known species.

Père Labat gives a full and interesting account of its habits, the hunt (chasse) after it on the 'Souphriere' of Guadeloupe, with a description of its size and plumage; there is also a plate of it.

It appears by his description and the plate, that the entire plumage was black; the shape of the bill in the plate is unlike that of a Petrel, but much resembles that of a Raven, but it may be improperly drawn. What the species was is a problem very desirable to be solved.

While breeding they were constantly pursued by the natives for food, when found in their holes there was no difficulty in their capture, as they made no efforts to escape. It would seem as if finally all were killed by persistent persecution, thus being a parallel case to that of the Great Auk.

As this old work is not very accessible to students, I have thought best to give the translation of a few extracts from it. He says—"This bird is about the size of a pullet; its plumage is black; it has the wings long and strong, the legs rather short, the feet like those of a duck, but furnished with strong and long claws, its bill is long of a good inch and a half, curved, pointed, extremely hard and strong; it has large eyes near the top of the head, which serve them admirably well during the night, but are nearly useless in the daytime, as they cannot endure the light nor discern objects, for when it is surprised by the day outside of its retreat, it knocks against anything with which it comes in contact and finally it falls to the ground.

"These birds live on fish which they procure during the night at sea; when through with their fishing, they return to the mountain, where they take to their holes like rabbits, and until night has come again do not return to the sea. The flesh is blackish with a little scent of fish, otherwise it is good and very nourishing.

"It begins to appear towards the end of September. They are then found in pairs in each hole. They remain until the end of November, when they disappear."

He gives a very full and particular account of the search after them, and says: "In spite of the dangers and inconveniences of this hunting, my curiosity tempted me to accompany five negroes." They were assisted in finding the birds by dogs, and each hunter carried a pole seven or eight feet long with a hook at the end. They procured about two hundred birds; such numbers being obtained, easily accounts for their extermination.

NOTE ON *Zenaida rubripes*.

I avail myself of this opportunity to correct an error which occurred in the 'Catalogue' of Grenada Birds.* I received from Mr. Wells a male of *Zenaida rubripes* after I had finished writing the catalogue. The account of its receipt and description was written on a slip of paper to be inserted in the catalogue in its proper place, but by inadvertence it was put under *Engyptila wellsi*, p. 625, instead of under *Zenaida rubripes*, p. 624.

* Proc. U. S. Nat. Mus. Vol. IX, 1886, p. 625.

BIRDS OF CARROLL COUNTY, INDIANA.

BY BARTON W. EVERMANN.

[*Concluded from Vol. V, p. 351.*]

73. **Coccyzus americanus.** YELLOW-BILLED CUCKOO. — A common summer resident, arriving about the middle of May. Fresh eggs June 30, 1885.

74. **Coccyzus erythrophthalmus.** BLACK-BILLED CUCKOO.—A common summer resident. Until 1884, the Black-billed seemed quite rare, but since then it has appeared to be more abundant than the Yellow-billed.

75. **Ceryle alcyon.** KINGFISHER.—A common summer resident, coming early, and remaining late in the autumn. A set of six eggs taken May 18, in which incubation had proceeded perhaps a week.

76. **Dryobates villosus.** HAIRY WOODPECKER.

77. **Dryobates pubescens.** DOWNY WOODPECKER.—These two familiar Woodpeckers are common residents of the County.

78. **Sphyrapicus varius.** YELLOW-BELLIED SAPSUCKER.—A rather rare resident, most common in the spring. I have specimens obtained December 15, 1884, and January 11, 1885.

79. **Ceophlœus pileatus.** PILEATED WOODPECKER.—Formerly a not uncommon resident, but I have seen none in the County for several years, and I have no doubt they have left it permanently.

80. **Melanerpes erythrocephalus.** RED-HEADED WOODPECKER.—Our most abundant Woodpecker, usually going south in the autumn, but frequently remaining with us all winter. This it did during the winter of 1881–82 in great numbers. I saw one in the southern part of the County, January 14, 1888.

81. **Melanerpes carolinus.** RED-BELLIED WOODPECKER.—A common resident, about as abundant in winter as in summer.

82. **Colaptes auratus.** 'YELLOWHAMMER.'— An abundant resident and one of our most valuable birds. Full sets of eggs may be found by May 4. In May and June, 1885, I obtained thirty-seven eggs in forty-nine days from a 'Yellowhammer' which had its nest near my house. The eggs were in seven sets, five, five, five, six, seven, four, and five eggs respectively.*

83. **Antrostomus vociferus.** WHIP-POOR-WILL.—Not uncommon as a summer resident, arriving from April 20 to May 1.

84. **Chordeiles virginianus.** NIGHTHAWK. — An abundant migrant, especially noticeable in the autumn.

85. **Chætura pelagica.** CHIMNEY SWIFT. —An abundant summer resident, arriving about the last week in April. April 27. 1884. As an instance of

*See Davie's 'Nests and Eggs of N. A. Birds,' p. 90.

peculiar nidification of this species I would mention the following. A pair fastened their nest in 1884 upon the inside of the door of an outhouse at the Vandalia depot in Camden. The birds entered the building through small holes made in the gables. This building was in daily use, but those who visited it were cautioned by the railroad agent to open the door with care so as not to jar the eggs from the nest. Four eggs were laid, one of which was jostled from the nest, the other three hatched, and the young were reared in safety. The nest was repaired and used again in 1885, and again in 1886, a brood being reared each season. Mr. R. S. Phipps, the Vandalia agent, informs me that the nest was not used in 1887.

86. **Trochilus colubris.** HUMMINGBIRD. — A common summer resident, arriving about May 8.

87. **Tyrannus tyrannus.** KINGBIRD.—The Kingbird is an abundant summer resident. It is first seen in the spring about the last of April. April 29, 1883; April 30, 1884; April 22, 1885.

88. **Myiarchus crinitus.** CRESTED FLYCATCHER.—A common summer resident. Arrives about the last of April. May 3, 1883; April 28, 1884; April 28, 1885.

89. **Sayornis phœbe.** PEWEE.—A common and familiar summer resident. First appears about the middle of March. March 17, 1884; March 31, 1885. Building by March 26, 1884.

90. **Contopus virens.** WOOD PEWEE. — Summer resident; common. Comes about April 24. Nest found June 18.

91. **Empidonax flaviventris.** YELLOW-BELLIED FLYCATCHER.—A rare migrant.

92. **Empidonax acadicus.** ACADIAN FLYCATCHER.—This little bird is an abundant summer resident, arrives about May 15, and has full sets of eggs by June 15. This is one of the most frequent victims of the Cowbird.

93. **Empidonax pusillus traillii.** TRAILL'S FLYCATCHER.—Rare; probably a summer resident. June 10, 1885.

94. **Empidonax minimus.** LEAST FLYCATCHER. — Summer resident, but not common.

95. **Otocoris alpestris praticola.** PRAIRIE HORNED LARK. — Up to 1879, very rare; since then becoming more common every year, until it is now a common resident, most abundant, however, in winter and early spring.

96. **Cyanocitta cristata.** BLUE JAY.—An abundant resident, beginning to nest as early as April 10.

97. **Corvus corax sinuatus.** AMERICAN RAVEN.—The Raven was at one time a common resident, but now seems to have entirely disappeared.

98. **Corvus americanus.** AMERICAN CROW.— An abundant resident. Nest with three eggs April 16.

99. **Dolichonyx oryzivorus.** BOBOLINK.—A rare spring migrant. Not noticed until 1883. May 6, 1883 and 1884.

100. **Molothrus ater.** COWBIRD. — An abundant summer resident, arriving about March 31. Among the victims of the Cowbird's parasitic

habit I have noticed the following:—Cardinal Grosbeak, Towhee, Red-eyed Vireo, Scarlet Tanager, Wood Thrush, Acadian Flycatcher, Indigo Bunting, Oven-bird, Worm-eating Warbler, Summer Yellowbird, Warbling Vireo, and Maryland Yellowthroat.

101. **Agelaius phœniceus.** RED-WINGED BLACKBIRD. — In suitable places, this is one of our most abundant summer residents. Returns from the south as early as February 12.

102. **Sturnella magna.** MEADOWLARK. — An abundant summer resident, from the middle of March to late in October. Occasionally a few remain all winter.

103. **Icterus spurius.** ORCHARD ORIOLE.—From the last of April to September a common resident, growing more abundant of late years.

104. **Icterus galbula.** BALTIMORE ORIOLE.—Summer resident, somewhat more common than the last. Arrives about April 24.

105. **Scolecophagus carolinus.** RUSTY BLACKBIRD. — Spring and autumn migrant, but not often seen.

106. **Quiscalus quiscula æneus.** BRONZED GRACKLE.—A very abundant summer resident, returning from the south about March 15 and remaining until quite late in the autumn.

107. **Carpodacus purpureus.** PURPLE FINCH.—Frequently seen late in the autumn and early in the spring;—probably a winter resident. October 12 and 19, 1878; January 25, 1879; April 22, 1884.

108. **Loxia curvirostra minor.** AMERICAN CROSSBILL.—An irregular winter visitant. Not noticed in the County until about the middle of March, 1883, when a few were seen near Delphi. About a dozen were seen in the evergreens in the Court-yard in Delphi December 26, 1884. Four or five were seen in Camden, March 27, 1885, another April 13, and a large flock heard flying northward over Burlington, April 23, 1885.

109. **Loxia leucoptera.** WHITE-WINGED CROSSBILL. — A very rare winter visitor. I saw a single female at Burlington, March 8, 1885, and killed it with a stick. Several others had been seen a few days before in the same place. Some were caught in a trap, but were let go again. Another female was seen at Camden, March 16, 1885. These, together with my records of its appearance at Bloomington, February 6, 10, and 23, 1883, and Mr. F. M. Noe's Indianapolis record of about the same date, are, as far as I am informed, the only records of the occurrence of the White-winged Crossbill in Indiana.

110. **Acanthis linaria.** REDPOLL.—My only record of the occurrence of this species in Carroll County is that of a fine male which I shot at Camden, November 5, 1878. I saw another at Bloomington, December, 1882. These are the only records I have for Indiana.

111. **Spinus tristis.** AMERICAN GOLDFINCH. — Resident, abundant during the summer.

112. **Spinus pinus.** PINE SISKIN.—A rare winter visitant.

113. **Plectrophenax nivalis.** SNOWFLAKE. — A rare winter visitant. My record of its occurrence in Carroll County shows:—January 15, 1884, saw two (♂ and ♀) near Pittsburg, both of which I got; January —, 1885,

two seen in the eastern part of the County; January — , 1885, a large flock seen in the eastern part of the County by Mr. J. C. Trent; February 13, 1885, three seen near Camden, two of which I got; February 23 and 24, 1885, two or three seen in the northwestern part of the County, two of which I secured.

114. **Poocætes gramineus.** VESPER SPARROW.—An abundant summer resident, arriving last of March.

115. **Ammodramus sandwichensis savanna.** SAVANNA SPARROW.—Migrant, not common.

116. **Ammodramus savannarum passerinus.** GRASSHOPPER SPARROW.—A very rare summer resident.

117. **Chondestes grammacus.** LARK FINCH. Until recently very rare, but now getting to be a rather common summer resident.

118. **Zonotrichia leucophrys.** WHITE-CROWNED SPARROW.—An abundant migrant in March and April, and September and October.

119. **Zonotrichia albicollis.** WHITE-THROATED SPARROW.—With the last an abundant migrant.

120. **Spizella monticola.** TREE SPARROW.—A common winter resident.

121. **Spizella socialis.** CHIPPING SPARROW.—A common summer resident.

122. **Spizella pusilla.** FIELD SPARROW.—Common summer resident.

123. **Junco hyemalis.** SLATE-COLORED JUNCO.—An abundant winter resident. Appears about the middle of October.

124. **Melospiza fasciata.** SONG SPARROW.—An abundant summer resident, and a few remain all winter.

125. **Melospiza lincolni.** LINCOLN'S SPARROW.—A very rare migrant.

126. **Melospiza georgiana.** SWAMP SPARROW.—A rare migrant.

127. **Passerella iliaca.** FOX SPARROW.— A common early migrant. March 30, 1884; March 18, 1880.

128. **Pipilo erythrophthalmus.** TOWHEE.—An abundant summer resident. I do not think any ever remain all winter. March 19, 1884; March 26, 1885.

129. **Cardinalis cardinalis.** CARDINAL.—A common resident.

130. **Habia ludoviciana.** ROSE-BREASTED GROSBEAK. — Summer resident, not very common. Most common during the migrations. May 5, 1884.

131. **Passerina cyanea.** INDIGO BUNTING.—A common summer resident.

132. **Spiza americana.** DICKCISSEL. — Common summer resident, growing more common each year.

133. **Piranga erythromelas.** SCARLET TANAGER.—A common summer resident, arriving about May 5, 1884; April 23, 1885.

134. **Progne subis.** PURPLE MARTIN.—A common summer resident. Arrives from the south as early as March 28.

135. **Petrochelidon lunifrons.** CLIFF SWALLOW.—This Swallow is an abundant summer resident. April 18, 1884.

136. **Chelidon erythrogaster.** BARN SWALLOW. — This is also abundant during the breeding season. April 24, 1884; April 16, 1885.

137. **Tachycineta bicolor.** TREE SWALLOW.—Migrant, not very common.

138. **Clivicola riparia.** BANK SWALLOW.—An abundant summer resident. April 6, 1884; April 8, 1885.

139. **Stelgidopteryx serripennis.** ROUGH-WINGED SWALLOW.—Summer resident, but less common than the preceding.

140. **Ampelis garrulus.** BOHEMIAN WAXWING.—I remember seeing a flock of half a dozen Waxwings on the cedar trees in my father's yard several years ago when I was a boy, which I felt sure were not the common Cedarbird with which I was quite familiar. I did not know at the time what they were, but I am now certain they were Bohemian Waxwings. They were seen in winter when there was a very heavy snow.

141. **Ampelis cedrorum.** CEDAR WAXWING.—A tolerably common summer resident.

142. **Lanius borealis.** NORTHERN SHRIKE.—Apparently a rare winter visitor. I have a fine male which I shot near Camden, January 19, 1884. I saw another January 8, of the same year.

143. **Lanius ludovicianus excubitorides.** WHITE-RUMPED SHRIKE. —Until recently a very rare resident, becoming more common since 1882. Seen oftenest along the hedges in the western (prairie) part of the County. Set of six eggs taken west of Pittsburg, May 10, 1884.

144. **Vireo olivaceus.** RED-EYED VIREO.—An abundant summer resident. Returned from the south May 5, 1884; May 4, 1885.

145. **Vireo philadelphicus.** PHILADELPHIA VIREO.—A rare summer resident.

146. **Vireo gilvus.** WARBLING VIREO.—A rather common summer resident. May 2, 1884; May 6, 1885.

147. **Vireo flavifrons.** YELLOW-THROATED VIREO. — A common migrant. May 5, 1884.

148. **Vireo solitarius.** BLUE-HEADED VIREO.—A common migrant. May 10, 1884.

149. **Mniotilta varia.** BLACK-AND-WHITE WARBLER.—A very rare summer resident, but common during the migrations. April 26, 1885.

150. **Protonotaria citrea.** PROTHONOTARY WARBLER.—A rare summer resident. I have seen it at but two places in the County,—one near Camden, and the other in the Maple Swamp already mentioned in connection with the Great Blue Heron.

I first met with this delightful Warbler during my visit to this swamp May 21, 1883. It seemed to be the height of the breeding season, several pairs of birds were seen, and five nests of nice fresh eggs were secured. Another visit was made to the swamp May 21, 1885. Several unfinished nests were found, but laying had not yet begun. A number of Prothonotaries were seen chasing about, across and around the open spaces among the trees. The males were in full song, and I do not remember to have witnessed anything in bird-life more beautiful and interesting.*

*See 'Ornithologist and Oölogist' for July, 1886.

On May 7, 1885, I saw a single male in a small swamp near Camden. It is now in my collection. This seems to be a very rare species in Indiana, and its distribution in the State a little peculiar. As far as I know it has been noted only at points near the Wabash River.

151. **Helminthophila pinus.** BLUE-WINGED WARBLER.—A rather rare summer resident. I saw a nest of young just able to fly in July, 1879. Specimens taken May 4, 6, 11, and 21, 1885, and May 10, 1884.

152. **Helminthophila chrysoptera.** GOLDEN-WINGED WARBLER.—One specimen shot near Camden, May 6, 1885, is the only one I have seen in the County.

153. **Helminthophila ruficapilla.** NASHVILLE WARBLER.—A common migrant. Common May 4-7, 1885.

154. **Helminthophila peregrina.** TENNESSEE WARBLER.—Migrant, usually less common than the preceding species. May 22, 1883. Very common May 14-19, 1885.

155. **Compsothlypis americana.** PARULA WARBLER.—A common migrant,—especially in spring of 1885, from May 4 to May 10.

156. **Dendroica tigrina.** CAPE MAY WARBLER.—Not a very common migrant. May 22, 1883; May 12, 1884; May 8-14, 1885.

157. **Dendroica æstiva.** YELLOW WARBLER.—Summer resident, not common. May 8, 1884; May 4 and 9, 1885.

158. **Dendroica cærulescens.** BLACK-THROATED BLUE WARBLER.—Migrant, a few seen almost every spring. May 7, 1884; May 5, 1885.

159. **Dendroica coronata.** MYRTLE WARBLER.—This is perhaps the most abundant Warbler during the migrations. It is the first to arrive in the spring and remains latest in the autumn. April 30, 1878; May 22, 1883; April 20, 1884; April 15, 1885; October 5, 1878. At Bloomington, Indiana, this Warbler is a rare winter resident.

160. **Dendroica maculosa.** MAGNOLIA WARBLER.—A common migrant. May 4, 1878; May 24, 1883; May 7, 1884; May 7, 12, and 18, 1885.

161. **Dendroica cærulea.** CERULEAN WARBLER.—A common summer resident, but most abundant during the migrations. May 21, 1883; May 5, 1884; May 6, 1885.

162. **Dendroica pennsylvanica.** CHESTNUT-SIDED WARBLER.—Common migrant. May 22, 1883; May 7, 1884; May 4, 1885.

163. **Dendroica castanea.** BAY-BREASTED WARBLER.—Tolerably common migrant. May 4, 1878; May 22, 1883; May 5, 1884; May 5, 1885. Very common from May 5 to May 20, 1885.

164. **Dendroica striata.** BLACKPOLL WARBLER.—A rather common migrant. May 21, 1883; May 21, 1885. More common some seasons than others.

165. **Dendroica blackburniæ.** BLACKBURNIAN WARBLER.—One of the less common Warblers in this State. May 24, 1883; April 28, 1885.

166. **Dendroica dominica albilora.** SYCAMORE WARBLER.—Summer resident, but not often seen. May 9, 1883; April 20, 1884; April 23, 1885.

167. **Dendroica virens.** BLACK-THROATED GREEN WARBLER.—A com-

mon migrant. May 3, 1883; May 5, 1884; April 28, 1885,—common until May 12.

168. **Dendroica vigorsii.** PINE WARBLER.—A rare migrant. A pair which I shot near Camden April 29, 1885, are the only ones I ever saw in the County.

169. **Dendroica palmarum.** PALM WARBLER.—A rather common spring migrant in some parts of the County. May 3, 1878; May 8, 1884; April 21, 1885. I have never noted it in the autumn.

170. **Seiurus aurocapillus.** OVEN-BIRD.—A common summer resident. May 4, 1885. Nest with full complement of eggs May 28, 1883.

171. **Seiurus noveboracensis.** WATER-THRUSH.—A rare migrant, possibly breeds here.

172. **Seiurus motacilla.** LOUISIANA WATER-THRUSH.—A rather rare summer resident. May 6, 1885; July, 1881.

173. **Geothlypis formosa.** KENTUCKY WARBLER.—Probably a rare summer resident.

174. **Geothlypis agilis.** CONNECTICUT WARBLER.—A rare migrant. May 21, 1883; May 21, 1885.

175. **Geothlypis philadelphia.** MOURNING WARBLER.—With the last a rare migrant. May 21, 1885.

176. **Geothlypis trichas.** MARYLAND YELLOWTHROAT.—A common summer resident. May 11, 1878; May 5, 1884; April 24, 1885. Found nest with five fresh eggs May 22, 1883. Saw young able to fly June 12, of same year.

177. **Icteria virens.** YELLOW-BREASTED CHAT. Summer resident, but rather rare. Not seen prior to May 8, 1883, when I saw a pair or two near Burlington. In the summer of 1884 I saw them again in the same locality and another pair near Camden; another pair was found nesting near the Tippecanoe River in the western part of the County, May 5, 1885.

178. **Sylvania mitrata.** HOODED WARBLER.—Not very common migrant. Several seen May 5-18, 1885, near Camden.

179. **Sylvania pusilla.** WILSON'S WARBLER.—One killed near Camden, May 18, 1885, is the only specimen I have seen in the County.

180. **Sylvania canadensis.** CANADIAN WARBLER. Rather rare migrant. Took two near Burlington, May 24, 1883; several others obtained May 12-18, 1885, near Camden.

181. **Setophaga ruticilla.** AMERICAN REDSTART.—A common summer resident, apparently growing less common. May 3, 1883; May 6, 1884; May 4 and 6, 1885; nest and eggs June 13, 1883.

182. **Anthus pensilvanicus.** AMERICAN PIPIT.—A very rare migrant I saw a dozen or more March 19, 1879, while the snow still lay upon the ground. They were along the water's edge on Deer Creek above Camden. These are the only ones I have ever seen in the County.

183. **Galeoscoptes carolinensis.** CATBIRD.—As elsewhere east of the Mississippi, one of the most common and familiar birds. May 3, 1883; April 27, 1884; April 23, 1885. Full sets of eggs are to be found usually by May 21.

184. **Harporhynchus rufus.** BROWN THRASHER.—This is also a common and well-known summer resident, returning from the south about the first of April. April 3, 1884. Full clutches of eggs May 4, 1885.

185. **Thryothorus ludovicianus.** CAROLINA WREN.—A rare resident, but apparently becoming more common from year to year. I do not remember to have seen this Wren until 1877, and from then up to 1879, I regarded it as a very rare bird. But in 1883-85 it seemed very much more common. October 10 and November 16, 1877; February 27, 1879; February 8 and 24, 1884.

186. **Troglodytes aëdon.** HOUSE WREN.—A tolerably common summer resident. In 1884, first seen April 28; common next day. In 1885, it returned just a week earlier.

187. **Troglodytes hiemalis.** WINTER WREN.—A rather rare resident, most frequently seen in winter; but I am quite certain it breeds here.

188. **Cistothorus palustris.** LONG-BILLED MARSH WREN.—A spring and autumn migrant, apparently quite rare.

189. **Certhia familiaris americana.** BROWN CREEPER.—Winter resident except for a few weeks in midwinter when it goes further south. Not very often seen. February 1 and 15, 1879; April 6 and 23, 1884; April 9, 1885.

190. **Sitta carolinensis.** WHITE-BREASTED NUTHATCH.—A common permanent resident.

191. **Sitta canadensis.** RED-BREASTED NUTHATCH.—I think this may be regarded as a rare resident. In August, 1878, I saw some three or four young near Burlington just able to fly. May 3, 1883, I saw one, and another on May 7, 1885.

192. **Parus bicolor.** TUFTED TITMOUSE.—One of our most common permanent residents.

193. **Parus atricapillus.** CHICKADEE.—A permanent resident, more common than the next.

194. **Parus carolinensis.** CAROLINA CHICKADEE.—Permanent resident, but not common.

195. **Regulus satrapa.** GOLDEN-CROWNED KINGLET.—Migrant late in the autumn and early in the spring,—probably a few remain all winter. April 9, 1885; November, 1877.

196. **Regulus calendula.** RUBY-CROWNED KINGLET.—With the preceding, a tolerably common migrant. October 5, 1878.

197. **Polioptila cærulea.** BLUE-GRAY GNATCATCHER.—A somewhat common summer resident. April 23, 1884; April 22, 1885. Full sets of eggs obtained May 17 from two nests which I saw the birds begin building May 5. I think from what I could see without climbing to the nests each day, that they were completed on the 12th and the first egg laid in each on that day.

198. **Turdus mustelinus.** WOOD THRUSH.—An abundant and delightful summer resident. May 3, 1883; April 28, 1884; April 23, 1885. Full sets of eggs June 17, 1882; May 24, 1883.

199. **Turdus fuscescens.** WILSON'S THRUSH.—Spring and autumn migrant, not very common. April 9, 1885, especially common.

200. **Turdus ustulatus swainsoni.** OLIVE-BACKED THRUSH.—Migrant with the last, not common.

201. **Turdus aonalaschkæ pallasii.** HERMIT THRUSH.—With the last a tolerably common migrant. October 5, 1878; March 30, 1884.

202. **Merula migratoria.** AMERICAN ROBIN.—One of our commonest and best known summer residents,—leaving so late in the autumn and returning so early in the spring as to almost appear a permanent resident. Our January or February 'thaw' seldom fails to bring a few back to us. I desire to call attention to a nesting habit of the Robin which is spoken of in the books as "unusual," that is the habit of constructing their nest upon a rail in the fence. This I have from childhood noticed to be a very common place for the Robin to put its nest. A place near the end of the rail where it is crossed by those of the next panel is usually selected, and generally about the fifth from the ground in an eight-rail fence. I have frequently known the same old nest to be repaired and used for two or even three years.

203. **Sialia sialis.** BLUEBIRD.—A common summer resident; a few probably remain in sheltered places throughout the winter. February 12, 1884; March 7, 1885. Until within the last ten years nearly every cleared field in this part of Indiana contained the stumps of the many trees that had been felled in clearing the land. Many of these stumps contained small hollows from three to six inches in diameter, and from one to two or three feet deep. As long as the stumps remained, these hollows were a favorite nesting place for the Bluebirds. But now that the stumps have been removed, the Bluebirds have betaken themselves to deserted woodpecker holes in trees, or to rotten fence posts.

A LIST OF THE BIRDS COLLECTED BY MR. C. J. MAYNARD IN THE ISLANDS OF LITTLE CAYMAN AND CAYMAN BRACK, WEST INDIES.

BY CHARLES B. CORY.

THE AVIFAUNA of the Islands of Little Cayman and Cayman Brack is apparently quite different from that of Grand Cayman. Only five of the resident species of Grand Cayman appear to be found in either of the smaller islands. No *Centurus* or *Icterus* occurs on either Little Cayman or Cayman Brack, and the *Mimocichla* instead of being *ravida* seems to be the Cuban form, *M. rubripes*. Several Cuban species occur in Cayman Brack and

Little Cayman which have not been observed on Grand Cayman, notably the *Mimocichla* already mentioned, *Quiscalus gundlachi* and *Chrysotis leucocephala*.

LITTLE CAYMAN.

Dendroica palmarum (*Gmel.*).
Dendroica discolor (*Vieill.*).
Dendroica vittellina *Cory*.
Dendroica cærulescens (*Gmel.*).
Dendroica aurocapilla (*Ridgw.*).
Geothlypis trichas (*Linn.*).
Certhiola sharpei *Cory*.
Vireo caymanensis *Cory*.
Ampelis cedrorum *Vieill.*
Euetheia olivacea (*Gmel.*).
Dolichonyx oryzivorus (*Linn.*).
Elainea martinica (*Linn.*).
Tyrannus dominicensis (*Gmel.*).
Actitis macularia (*Linn.*).
Sula cyanops (*Sundev.*).

CAYMAN BRACK.

Mimocichla rubripes (*Temm.*).
Galeoscoptes carolinensis (*Linn.*).
Dendroica palmarum (*Gmel.*).
Dendroica discolor (*Vieill.*).
Dendroica vittellina *Cory*.
Helmitherus vermivorus (*Gmel.*).
Compsothlypis americana (*Linn.*).
Seiurus noveboracensis (*Gmel.*).
Seiurus aurocapillus (*Linn.*).
Setophaga ruticilla (*Linn.*).
Certhiola sharpei *Cory*.
Chelidon erythrogaster (*Bodd.*).
Vireo alleni *Cory*.
Vireo caymanensis *Cory*.
Euetheia olivacea (*Gmel.*).
Quiscalus gundlachi *Cass*.
Elainea martinica (*Linn.*).

Pitangus caudifasciatus (*D'Orb.*).
Tyrannus dominicensis (*Gmel.*).
Crotophaga ani (*Linn.*).
Chrysotis leucocephala (*Linn.*).
Columba leucocephala *Linn.*
Columbigallina passerina (*Linn.*).
Zenaida amabilis *Bonap.*
Actitis macularia (*Linn.*).
Arenaria interpres (*Linn.*).
Ægialitis semipalmata (*Bonap.*).
Ardea virescens (*Linn.*).
Sula cyanops *Sundev.*

NOTES ON THE HABITS, NESTS, AND EGGS OF *DENDRAGAPUS OBSCURUS FULIGINOSUS*, THE SOOTY GROUSE.

BY CAPT. CHARLES E. BENDIRE.

THE SOOTY GROUSE, better known on the Pacific coast, however, under the names of Blue Grouse and Pine Hen, has a wide range of distribution. Ridgway, in his 'Manual of North American Birds,' gives its habitat as "Mountains near Pacific coast from California to Sitka, Alaska." It is found, however, equally abundant in suitable localities throughout the entire interior mountain system of the Northwest, as far east at least as the western spurs of the Bitter Root Range of Montana, fully 800 miles from the sea-coast, throughout the entire Blue Mountain and Cascade Ranges of Oregon, as well as through the mountains of Washington and Idaho Territories, and northern Nevada. These birds from the interior, beginning from the eastern foot-hills of the Cascade Range (vicinity of Fort Klamath, Oregon), and throughout the remaining localities mentioned, are, however, much lighter and paler colored than the type specimens of *D. obscurus fuliginosus* Ridgway, which were obtained in the vicinity of Sitka, Alaska, but are nevertheless referable to this form rather than to *D. obscurus* (Say).

I have met with the Sooty Grouse in all the above-mentioned localities in the Northwest, and have had excellent opportunities to observe their habits. As a game bird, considered from a sportsman's point of view, it has no peer, and its flesh, in gastronomic value, is of an equal order of excellence. Although a resident throughout the year, wherever found, the Sooty Grouse is seldom seen during the winter months, spending almost the entire time in the tops of tall, bushy fir and pine trees, which it leaves only for a short time about the middle of the day to procure water from some little mountain spring.

Their presence in a tree selected by these birds as a roosting and budding place can, however, be readily detected by a close observer, especially when the ground, as it almost invariably is at that time of the year, is covered with a foot or two of snow. The food of the Sooty Grouse during the entire winter consists almost exclusively of the buds and tender tops of the pine and fir branches, as well as of fully grown pine needles. In picking these off, a certain amount is usually rejected, or dropped by accident, and I have seen fully a bushel or more scattered about the base of a single tree, which I attributed at first to the work of squirrels, till I found out otherwise. The use of such food imparts to the flesh of these birds at this season a strong, resinous flavor, not particularly relished by me at first. After finding such a tree used as a roosting place, it still remained to locate the birds, which generally proved to be a more difficult matter than one would anticipate. When they found themselves discovered they would usually remain perfectly motionless, and it was no easy matter to see a bird among the dense branches. If sitting on a good-sized limb, they would crouch lengthwise on it, leaving very little of their body exposed to view from below, and if one went off some little distance the foliage of the lower limbs would hide the bird equally effectively. Single families only are found together during the winter, say from eight to twelve birds, and frequently but two or three. I have scarcely ever seen larger packs together at any time. They certainly do not pack in the late autumn in the manner of Sage Fowl (*Centrocercus urophasianus*) and Sharp-tailed Grouse (*Pediocætes phasianellus columbianus*), both of these species having been observed by me on more than one occasion in packs numbering over a hundred.

I first met with the Sooty Grouse on Craig's Mountain near

Fort Lapwai, Idaho, on the Nez Percé Indian Reservation, and was told by both trappers and Indians that these birds did not remain there during the winter, in which belief I consequently shared at that time. I was also told that when a covey had been located in a tree, by being careful always to shoot the bird sitting lowest, the whole lot might be secured successfully. This may be so, but somehow it always failed with me; usually after the second shot, often even after the first, and certainly at the third, the remaining birds took wing, and generally flew quite a distance before alighting again, nearly always placing a deep cañon between themselves and me.

At Fort Lapwai, Idaho, in the early fall of 1870 and of 1871, on two or three occasions I found a few of these birds mixed in and feeding with large packs of the Sharp-tailed Grouse. This must, however, be considered as an unusual behavior, as I never noticed it anywhere else subsequently, although both species were equally abundant in other localities where I met them frequently in after years. The favorite locations to look for the Sooty Grouse during the spring and summer are the sunny, upper parts of the foothills, bordering on the heavier timbered portions of the mountains, among the scattered pines and the various berry-bearing bushes found in such situations and along the sides of cañons. According to my observations these birds are scarcely ever found any distance within the really heavy timber. In the middle of the day they can usually be looked for with success amongst the deciduous trees and shrubbery found along the mountain streams in cañons, especially if there is an occasional pine or fir tree mixed amongst the former. The cocks separate from the hens after incubation has commenced, I believe, and keep in little companies, say from four to six, by themselves, joining the young broods again in the early fall. At any rate I have more than once come on several cocks in June and July, without seeing a single hen amongst them. High rocky points near the edges of the main timber, amongst juniper and mountain mahogany thickets, are their favorite abiding-places at that time of year. The young chicks are kept by the hen for the first week or two in close proximity to the place where they were hatched, and not till they have attained two weeks' growth will they be found along the willows and thickets bordering the mountain streams. Their food consists at first, principally of grasshoppers, insects, and tender plant tops,

and later in the season of various species of berries found then in abundance everywhere, as well as the seeds of a species of wild sunflower, of which they seem to be very fond. It is astonishing how soon the young chicks learn to fly, and well, too, and how quickly they can hide and scatter at the first alarm note of the mother bird which invariably tries by various devices to draw the attention of the intruder to itself and away from its young. A comparatively small leaf, a bunch of grass, anything in fact will answer their purpose; you will scarcely be able to notice them before they are all securely hidden, and unless you should have a well-trained dog to assist you, the chances are that you would fail to find a single one, even when the immediate surroundings were open. After the young broods are about half grown, they spend the greater portion of the day, and, I believe, the night as well, among the shrubbery in the creek bottoms, feeding along the side hills in the early hours of the morning and evening. During the heat of the day they keep close to the water, in shady trees and the heavy undergrowth. They walk to their feeding grounds, but in going to water they usually fly down from the side hills.

The love note of the cock has a very peculiar sound, hard to describe. It can be heard at almost any hour of the day in the spring, often in the beginning of March when there is still plenty of snow to be found, and it is kept up till well into the month of May. It is known as hooting or booming. The cocks when engaged in this amusement may be found perched on horizontal limbs of large pine or fir trees, with their air-sacks inflated to the utmost, wings drooping and the tail expanded. They present then a very ludicrous appearance, especially about the head. When at rest, these air-sacks, of a pale orange yellow color in the spring, are only noticeable by separating the feathers on the neck and upper parts of the breast, but when inflated they are the size of a medium orange and somewhat resemble one cut in halves. This call is repeated several times in rapid succession, decreasing in volume gradually, but can at any time be heard at quite a distance. It appears to be produced by the sudden forcing of a portion of the air in the sack quickly through the throat, and is quite misleading as to the exact locality where uttered, the birds being expert ventriloquists. I have frequently hunted in vain to locate one while so engaged where there were but a few trees in the vicinity; and although I searched each one through carefully

and with a powerful field glass to assist me, I had to give it up, completely baffled.

It is beyond me to describe this love call accurately. Some naturalists state that it resembles the sound made by blowing into the bunghole of an empty barrel, others find a resemblance to the cooing of a pigeon and some to the noise made by whirring a rattan cane rapidly through the air. The latter sound comes in my opinion nearer to it than anything else. The closest approach to it I can give in letters, is a deep, guttural *muhum*, the first letter scarcely sounded.

The accounts of the nesting habits of the Sooty Grouse are somewhat vague, the number of eggs to a set being variously given as from eight to fifteen. I have personally examined quite a number of the nests of this Grouse between May 6, 1871, and June 25, 1883. The largest number of eggs found by me in a set was ten, in two instances, three sets contained nine each, seven sets contained eight each, and five sets seven eggs or less, the latter probably incomplete, although some of these sets of eggs were advanced in incubation. I think that eight eggs is the ordinary number laid by these birds.

Eggs may be looked for from April 15 to the latter part of May, according to altitude. The earliest date on which I obtained eggs of this Grouse was April 18, 1877, when a set was found by Lieut. G. R. Bacon, 1st Cavalry, containing seven fresh specimens. This nest was placed in a willow bush growing under a solitary pine tree, in a small ravine, five miles northwest of Camp Harney, Oregon. This nest was composed entirely of dry pine needles, picked up in the immediate vicinity.

A nest found by me April 22, 1877, about four miles west of Camp Harney, was placed under the roots of a fallen juniper tree, in a grove of the same species, growing on an elevated plateau close to the pine belt. This nest was well hidden, a mere depression in the ground, and composed of dry grasses, a few feathers from the bird's breast, and dry pine needles. The nine eggs were about half way imbedded in this mass, and nearly fresh.

As a rule, most of the nests found by me were placed in similar situations under old logs or the roots of fallen trees, and generally fairly well hidden from view, and amongst the more open pine timber along the outskirts of the forest proper. Occasionally, however, a nest may be found some little distance from

timber and in the lower parts of mountain valleys. I found such a nest on April 26, 1878, amongst some tall rye-grass bushes, in a comparatively open place and within a yard of Cow Creek, a small mountain stream about four miles east of Camp Harney. There was no timber of any size, only small willow bushes, within two miles of this nest. The nest was placed partly under one of these rye-grass bushes, and the bird sat so close that I actually stepped partly on her and broke two of the eggs in doing so. This nest contained eight slightly incubated eggs. It was composed of dead grass and a few feathers.

The most exposed nest, without any attempt at concealment whatever, that came under my observation, I found on June 8, 1876, on the northern slope and near the summit of the Cañon City Mountain, in Grant Co., Oregon, at an altitude of about 6800 feet. I was returning from escort duty to Cañon City and sent the party with me around by the stage road which wound in zigzag turns up the steep mountain, myself and one of my men taking a much shorter but far steeper Indian trail which intersected the wagon road again on the summit.

Near this intersecting point the trail passed through a beautiful oval-shaped mountain meadow of about an acre in extent, and near the summit of which stood a solitary young fir tree. No other trees were growing nearer than thirty yards from this one. The meadow itself was covered with a luxurious growth of short, crisp mountain grass and alpine flowers, altogether as lovely a spot to take a rest in as could well be found. Arriving at this point, and knowing that the party would not be along for more than half an hour at least, I dismounted and unsaddled my horse to let him have a roll and a good chance at the sweet mountain grass, of both of which opportunities he was not slow in taking advantage. Throwing the saddle in the shade made by the little fir, I lay down to take a rest myself. I had a fine setter dog with me, who had been ranging along both sides of the trail and who came up wagging his tail just as I had settled myself comfortably. 'Rock,' my setter, had approached perhaps within two feet of me at a pretty brisk lope, when all of a sudden he came to an abrupt halt, fairly freezing and stiffening in his tracks, and made a dead point alongside of me. I could not understand at first what this all meant, even my horse thought it worth the while to stop eating, and with its ears pointed forward was looking in the same

direction. 'Rock' was fairly trembling with excitement, but kept to his point. Jumping up quickly, I looked to the right and rear, thinking that perhaps a rattlesnake might be coiled up in the grass, and saw at once the cause of my dog's strange behavior. It was only a poor Sooty Grouse sitting within three feet of me on her nest containing two chicks and seven eggs on the point of hatching. It was as touching a sight as I had ever seen, the poor bird, although nearly scared to death, with every feather pressed close to her body, and fairly within reach of the dog, still persisted in trying to hide her treasures; and her tender brown eyes looked entreatingly on us rude intruders, and if eyes can speak, hers certainly pleaded most eloquently for mercy. She let me almost touch her before she fluttered off the nest, feigning lameness, and disappeared in the neighboring undergrowth. Counting the eggs, and examining one of the young chicks which apparently had only left the shell a few minutes before, I at once vacated this vicinity and took up a position some fifty yards in an opposite direction from what the bird had taken, to watch further proceedings. The grass was so short that it did not hide the bird which, after perhaps ten minutes' waiting, came slowly creeping and crouching towards the nest and covered the eggs again. I did not disturb her further, and hope that, although her selection of a nesting site so thoroughly exposed was not judicious, she succeeded in rearing her brood in safety. None of the eggs in the nest touched each other; they were all about half covered or imbedded in the material out of which the nest was made—dry grass, pine and fir needles, and a few of the bird's feathers presumably plucked out by herself.

Incubation lasts about eighteen days. Females predominate in numbers. The weight of full grown cocks varies from two and a half to three pounds; I have never obtained one that weighed more. Hens weigh from one and three-quarters to two and a half pounds; the latter weight, however, is rare. Many of the young broods are fully grown by August 15. They afford excellent sport, lie well to a dog, often letting you almost step on them before taking wing, and are strong and swift flyers. Their ordinary note very much resembles the cackling of the domestic hen. The Indian name of the Sooty Grouse on the Northwest coast is *tyhee cullaw-cullaw*, chief bird.

As stated before, according to my own observation, the usual

numbers of eggs laid by the Sooty Grouse is about eight, and occasionally as many as ten are found in a set. Their ground color varies from a pale cream color to a creamy buff, the latter predominating; in a single set before me it is a pale cinnamon. The eggs are more or less spotted over their entire surface with fine dots of chocolate or chestnut brown; these spots vary considerably in size in different sets of eggs, ranging from the size of a No. 3 shot, to that of mustard seed. These markings are generally well rounded, regular in shape, and pretty evenly distributed over the entire egg. They never run into irregular and heavy blotches such as are frequently found in the eggs of the Canada Grouse (*Dendragapus canadensis*), which approach the pattern found amongst the eggs of the Willow Ptarmigan (*Lagopus lagopus*) much nearer than the former. In the eggs of the Sooty Grouse all these markings, as well as the overlying ground color, can be readily washed off when the eggs are still quite fresh, leaving the shell of the egg a very pale creamy white in reality. The largest egg in the series in the National Museum collection measures 2.08 × 1.35 inches; the smallest 1.78 × 1.28 inches. Average size about 1.86 × 1.31 inches. The shape of the majority of these eggs is ovate; some may be called short ovate and others elongate ovate. There is no perceptible difference between the eggs of the Sooty Grouse and those of *Dendragapus obscurus*, the Dusky Grouse, as well as those of *Dendragapus obscurus richardsonii*, Richardson's Grouse; their habits are also essentially the same.

ON THE SUMMER BIRDS OF BERKSHIRE COUNTY, MASSACHUSETTS.

BY WALTER FAXON.

DURING the summer of 1888 I spent a month (June 17 to July 16) in Berkshire, and made as complete lists as possible of the birds found in the extreme southern part of the county, and near the northern border, especially on the Saddle-Back or Graylock range of mountains. These lists, together with Mr. William

Brewster's* account of a nine days' exploration of the region about Graylock in June, 1883, will, I believe, give a fair notion of the summer Passerine birds of the County.

Southern Berkshire. Ten days were spent in Sheffield, a southern border town, whence excursions were made into the neighboring towns of Massachusetts and Connecticut. The village of Sheffield lies along the Housatonic River, 675 feet above the sea, in an alluvial interval, seven miles in breadth. The valley is abruptly closed on the west by the massive wall of the Taconic Mountains, which here culminate for southern Berkshire in the Dome, or Mount Everett, at 2624 feet. On the east the valley is bounded by the lower and less precipitous range of the Hoosacs. The valley of the Housatonic, trending north and south, like that of the Connecticut, has attracted several birds that give a distinctly southern cast to the fauna. I refer to the presence of such birds as the Yellow-breasted Chat and Orchard Oriole, and to the comparative abundance of the Grasshopper Sparrow, Mourning Dove, etc. The likeness to the avifauna of the Connecticut Valley at Springfield† is further shown by the rarity of the White-eyed Vireo, White-bellied Swallow, and Redstart, so common in the eastern counties of Massachusetts.

The mountains of southern Berkshire nowhere much exceed an altitude of 2600 feet, and are nearly destitute of spruce and fir. Their sides are for the most part clothed with a heavy second growth of chestnut, oak, birch, maple, etc. The loftiest summits are barren ledges of mica-schist and quartz, sparsely covered by low, prostrate pitch pines, gray birches, red oaks, scrub oaks, and mountain ashes. Such conditions of vegetation would doubtless attract but few Canadian birds, even if the height of the mountains were much greater than it is. Nevertheless, the presence of a few northern forms leaves a perceptible Canadian impress on the fauna of these mountains, when compared with that of the underlying valley. The Wood Thrushes of the valley are supplanted in a large measure by Hermit Thrushes. Nashville Warblers and Blue-headed Vireos, seldom seen in the low country, become tolerably common, while the dense undergrowth of moun-

*Notes on the Summer Birds of Berkshire County, Massachusetts. By William Brewster. Auk, I, Jan. 1884, pp. 5-16.

† Catalogue of the birds found at Springfield, Mass., etc. By J. A. Allen. Proc. Essex Inst., IV, 1864.

tain laurel affords a congenial home to the Black-throated Blue and Canadian Warblers. Indeed I have nowhere found the former bird more abundant than in the mountains of southwestern Berkshire and northwestern Connecticut. On the highest mountain tops, such as the Dome of the Taconics and Bear Mountain,* the Snowbird breeds in company with the Hermit Thrush, Chestnut-sided and Nashville Warblers and Towhee. The Towhee is very common on all the barren summits of the Taconic range in southern Berkshire, much more so than in the valley below.

Northern Berkshire. During my stay in northern Berkshire, from June 28 to July 16, I lived at a farmhouse in the Notch Road, near the boundary line between North Adams and Adams. Most of the time spent here was devoted to exploring the Saddle-Back Mountains. By this name I designate the well-defined range midway between the Taconics and Hoosacs, which culminates in Graylock Peak in Adams, 3505 feet above the sea, the loftiest mountain in the State. A good carriage road was built in 1885 to the summit of Graylock. Leaving the Notch Road in North Adams, the way ascends for about a mile and a half through open pasture land, entering the forest on the northwestern flank of Mt. Williams, from which point it passes through an almost unbroken forest on the western side of the crest of the main ridge to the summit of Graylock, a distance of about four miles. After crossing Money Brook, nearly three miles from the summit (altitude, 2480 feet), the forest is the primeval growth of black spruce, with some admixture of yellow and canoe birch, sugar maple, etc., and, towards the summit, balsam fir. The Graylock turnpike has thus opened an easy path through the most interesting part of the Saddle-Back range, but ere long there will be reason to deplore the construction of this avenue which is to the lumberman only an invitation to strip the crest and western slope of the range. With the destruction of this forest some of the most interesting birds of the region will, doubtless, abandon Massachusetts as a breeding-ground for ever.

When one considers the very moderate elevation of the Saddle-Back range and the comparatively small area of coniferous forest offered by it, the number of northern birds that breed there is rather surprising. I believe the only truly migratory Canadian species

*The highest mountain in Connecticut, 2354 feet.

found during the breeding season in the White Mountains of New Hampshire that have not been detected in Berkshire are the Blackpoll and Bay-breasted Warblers, and the Philadelphia Vireo. The Red-bellied Nuthatch, Brown Creeper, Mourning Warbler, Blackburnian Warbler, and Hairy Woodpecker quite unexpectedly proved to be much commoner about Graylock than I have found them among the White Mountains. Others, on the contrary, are comparatively rare, as the Yellow-bellied Flycatcher,* Yellow-rumped Warbler, Golden-crowned Kinglet, and Bicknell's Thrush.

From an ornithological point of view the Saddle-Back range is but an outlier of the Catskills. On reading Mr. Bicknell's notes on the summer birds of the southern Catskills† I was struck with their oppositeness to the Graylock list. I believe the only Catskill bird not yet found on Graylock to be the Blackpoll Warbler, discovered about the summit of Slide Mountain, the highest peak of the Catskills (4205 feet). After finding the Bicknell's Thrush on the summit of Graylock I confess to having looked with some confidence for another waif from the Catskills in the shape of a Blackpoll Warbler. Though unsuccessful, I believe that this bird will yet be found on Graylock by some future explorer.‡ The absence of the White-throated Sparrow and Nashville Warbler from Mr. Bicknell's list is surprising.

Perhaps not even in the Catskills do two distinctly typical faunæ come into such sharp contact as on the Saddle-Back range of northern Berkshire. The top of Graylock is only about 2800 feet above the Hoosac River at North Adams. Yet within this narrow vertical range we pass from a pure Alleghanian fauna characterized by such birds as the Bluebird, Wood Thrush, House Wren, Brown Thrasher, Yellow Warbler, Yellow-breasted Chat, Field Sparrow, Towhee, Scarlet Tanager, Baltimore Oriole, and Quail to a Canadian assemblage which includes the Hermit, Swainson's, and Bicknell's Thrushes; the Golden-crowned Kinglet, Winter Wren, and Red-bellied Nuthatch; the Black-

* A pair of Yellow-bellied Flycatchers was seen on Graylock by Mr. Brewster, June 28, 1883. I neither saw nor heard this bird in 1888.

† A Review of the Summer Birds of a part of the Catskill Mountains, etc. By Eugene Pintard Bicknell. Trans. Linn. Soc. N. Y., I, 1882.

‡ "*Dendræca striata* has been seen in North Adams in August with young so immature that they must have been of local origin." T. M. B[rewer]. Bull. Nuttall Orn. Club, III, July, 1878, p. 138.

burnian, Black-throated Blue, Black-and-yellow, Yellow-rumped, Tennessee, Mourning, and Canadian Warblers; the White-throated Sparrow, Snowbird, Pine Finch, and Red Crossbill; the Olive-sided Flycatcher, and the Yellow-bellied Woodpecker. Under such conditions of compression there is naturally some intermingling of species representative of the two faunæ. Mr. Brewster* justly questions whether altitude be the sole factor regulating the distribution of birds on mountain slopes, and whether artificial causes, like the destruction of forests or the replacement of coniferous by deciduous trees, may not lead to a readjustment of faunal lines. This must be true especially in the case of a mountain of such moderate height as Graylock. I think that any one who has ascended this mountain by several routes will admit that the character of the surface and the vegetation have more to do with the distribution of the birds than temperature or other purely climatic conditions. If one should draw a line around the Saddle-Back range to indicate in a general way the limit of the Canadian faunal area, it would bear no closer relation to the altitudinal contour lines than do the isothermal lines across a continent to the parallels of latitude. On the North Adams side of the mountain the Canadian birds descend to a much lower level than they do in Williamstown. Not far from the North Adams Reservoir I found in some spruce and hemlock woods the Hermit Thrush, Black-throated Blue, Black-and-yellow, and Canadian Warblers, and Snowbird, evidently on their breeding-ground, within about half a mile of, and on the same level with the Yellow-breasted Chat, Towhee, and Brown Thrasher. The Wood Thrushes of the beech forest in the northern ravine of the Hopper compared with the Hermit Thrushes and other northern birds found at the same altitude on the opposite side of the 'Mountain Pasture' or height-of-land, afford another illustration of the influence of vegetation on the distribution of birds. When these mountains were in their primitive state and uniformly covered with forest, the correspondence between altitude and faunal regions was without doubt much closer than it is now.

LIST OF BIRDS OBSERVED IN SOUTHERN BERKSHIRE (SHEFFIELD, AND VICINITY), JUNE 17-26, 1888.

1. **Actitis macularia**. SPOTTED SANDPIPER.—A few seen on the Housatonic River.

*Auk. I, p. 16.

2. **Bonasa umbellus.** RUFFED GROUSE.—Common, especially on the mountain sides.

3. **Zenaidura macroura.** MOURNING DOVE.—Rather common.

4. **Circus hudsonius.** MARSH HAWK.—Two seen.

5. **Buteo borealis.** RED-TAILED HAWK.—Two seen.

6. **Falco peregrinus anatum.** DUCK HAWK.—A pair established on Black Rock, a high cliff in the Taconic mountains, northwest of Isaac Spurr's.

7. **Coccyzus erythrophthalmus.** BLACK-BILLED CUCKOO.—Not rare.

8. **Ceryle alcyon.** BELTED KINGFISHER.—Three or four seen.

9. **Dryobates pubescens.** DOWNY WOODPECKER.—One seen, in the village of Sheffield.

10. **Colaptes auratus.** GOLDEN-WINGED WOODPECKER.—Common.

11. **Antrostomus vociferus.** WHIP-POOR-WILL.—Common.

12. **Chordeiles virginianus.** NIGHTHAWK.—Common.

13. **Chætura pelagica.** CHIMNEY SWIFT.—Common.

14. **Trochilus colubris.** RUBY-THROATED HUMMINGBIRD.—Two or three seen.

15. **Tyrannus tyrannus.** KINGBIRD.—Common.

16. **Myiarchus crinitus.** CRESTED FLYCATCHER.—Not rare.

17. **Sayornis phœbe.** PEWEE.—Abundant.

18. **Contopus virens.** WOOD PEWEE.—Abundant.

19. **Empidonax pusillus traillii.** TRAILL'S FLYCATCHER.—Three or four seen in alders near water-courses.

20. **Empidonax minimus.** LEAST FLYCATCHER.—Abundant.

21. **Cyanocitta cristata.** BLUE JAY. Rather common.

22. **Corvus americanus.** AMERICAN CROW.—Common.

23. **Dolichonyx oryzivorus.** BOBOLINK.—Abundant.

24. **Molothrus ater.** COWBIRD.—Not uncommon.

25. **Agelaius phœniceus.** RED-WINGED BLACKBIRD.—Common.

26. **Sturnella magna.** MEADOWLARK.—Not rare in the interval meadows of Sheeffild.

27. **Icterus spurius.** ORCHARD ORIOLE.—Three or four, in full song, in Sheffield. A male, in second-year plumage, seen in Pittsfield, June 27.

28. **Icterus galbula.** BALTIMORE ORIOLE.—Common.

29. **Quiscalus quiscula (æneus?).** CROW BLACKBIRD.—Not uncommon The impropriety of using a gun in the places where I saw the Crow Blackbirds prevented a positive determination of the subspecies.

30. **Carpodacus purpureus.** PURPLE FINCH.—Common.

31. **Spinus tristis.** AMERICAN GOLDFINCH.—Common.

32. **Poocætes gramineus.** BAY-WINGED SPARROW.—Common.

33. **Ammodramus sandwichensis savanna.**—SAVANNA SPARROW.—Abundant.

34. **Ammodramus savannarum passerinus.** GRASSHOPPER SPARROW.—Common.

35. **Ammodramus henslowi.** HENSLOW'S SPARROW.—Two pairs in a low, wet piece of ground in Sheffield. They were not shy. The males sometimes sang in the grass and sedge, wholly out of view, at other times

mounted on tall weeds, shrubs, or low trees. Mr. Maynard compares the song to the syllables *seé-wick*, but to my ear there was a liquid sound in the first part—*fleé-sic*, with a strong accent upon the first syllable. When heard at a very short distance it seemed almost tri-syllabic—*f'-leé-sic*. The song is delivered rapidly, the head thrown back as the notes are emitted.

36. **Spizella socialis**. CHIPPING SPARROW.—Abundant.

37. **Spizella pusilla**. FIELD SPARROW.—Common.

38. **Junco hyemalis**. SNOWBIRD.—Not uncommon on the summit of the Dome of the Taconics (or Mt. Everett), 2624 feet above the sea-level. Also found on the top of Bear Mt., Salisbury, Conn. (altitude, 2354 feet), June 24.

39. **Melospiza fasciata**. SONG SPARROW.—Abundant.

40. **Melospiza georgiana**. SWAMP SPARROW.—Not uncommon in suitable localities.

41. **Passer domesticus**. HOUSE SPARROW.—Common in the village of Sheffield.

42. **Pipilo erythrophthalmus**. TOWHEE.—Common, especially on the barren summits of the Taconic Mts.

43. **Habia ludoviciana**. ROSE-BREASTED GROSBEAK.—Rather common.

44. **Passerina cyanea**. INDIGO-BIRD.—Common.

45. **Piranga erythromelas**. SCARLET TANAGER.—Rather common. Known in Berkshire as the 'English Robin.'

46. **Petrochelidon lunifrons**. EAVE SWALLOW.—Common.

47. **Chelidon erythrogaster**. BARN SWALLOW.—Common.

48. **Clivicola riparia**. BANK SWALLOW.—Common, breeding in the banks of the Housatonic River.

49. **Ampelis cedrorum**. CEDARBIRD.—Common.

50. **Vireo olivaceus**. RED-EYED VIREO.—Abundant.

51. **Vireo gilvus**. WARBLING VIREO.—Common.

52. **Vireo solitarius**. BLUE-HEADED VIREO.—Not very common. Met with at Guilder's Pond, on the west side of the Dome, and in some other places.

53. **Vireo noveboracensis**. WHITE-EYED VIREO.—Only two specimens observed.

54. **Mniotilta varia**. BLACK-AND-WHITE WARBLER.—Common.

55. **Helminthophila ruficapilla**. NASHVILLE WARBLER.—Rare at lower levels, not rare on the mountains.

56. **Compsothlypis americana**. BLUE YELLOW-BACKED WARBLER.—Not common.

57. **Dendroica æstiva**. YELLOW WARBLER.—Common along the willowed shores of streams near the village. Seldom observed elsewhere.

58. **Dendroica cærulescens**. BLACK-THROATED BLUE WARBLER.—Common on the Taconic Mts. from their base to summit. Wherever the mountain sides presented a fine growth of maple, chestnut, etc., with a dense under-growth of mountain laurel (*Kalmia latifolia*), the drawling notes of this bird were sure to be heard. Indeed I have nowhere found them more abundant than here. They are equally common in similar places in the northwestern part of Connecticut.

59. **Dendroica pensylvanica.** CHESTNUT-SIDED WARBLER.—Common, extending up to the highest summits of the Taconic Mts.

60. **Dendroica blackburniæ.** BLACKBURNIAN WARBLER.—But one specimen observed, a male in full song, in a grove of white pines in Sheffield, June 20.

61. **Dendroica virens.** BLACK-THROATED GREEN WARBLER.—Not rare in pine woods.

62. **Seiurus aurocapillus.** GOLDEN-CROWNED THRUSH.—Common wherever there are woods.

63. **Seiurus noveboracensis.** WATER-THRUSH.—One observed, June 17, on the edge of a small stream near the village of Sheffield. Although the place was often visited afterward, I failed to see or hear the bird again. I did not meet with this species later in northern Berkshire.

64. **Geothlypis trichas.** MARYLAND YELLOW-THROAT.—Common.

65. **Icteria virens.** YELLOW-BREASTED CHAT.—One pair, Sheffield.

66. **Sylvania canadensis.** CANADIAN WARBLER.—Not uncommon on the Taconic Mts. of southwestern Berkshire and Litchfield Co., Conn.

67. **Setophaga ruticilla.** AMERICAN REDSTART.—Rare.

68. **Galeoscoptes carolinensis.** CATBIRD.—Common.

69. **Harporhynchus rufus.** BROWN THRASHER.—Not rare, although not nearly so common as in eastern Massachusetts.

70. **Troglodytes aëdon.** HOUSE WREN.—Common.

71. **Parus atricapillus.** CHICKADEE.—Not many were seen.

72. **Turdus mustelinus.** WOOD THRUSH.—Common.

73. **Turdus fuscescens.** WILSON'S THRUSH.—Common. A few observed well up towards the summit of the Dome.

74. **Turdus aonalaschkæ pallasii.** EASTERN HERMIT THRUSH.—Common on the Taconic Mountains where it replaces to a great extent the Wood Thrush which is found only sparingly on the mountain sides. Also found to be abundant on Bear Mt., Salisbury, Conn.

75. **Merula migratoria.** AMERICAN ROBIN.—Abundant.

76. **Sialia sialis.** BLUEBIRD.—Common.

(*To be continued.*)

REMARKS UPON ABNORMAL COLORING OF PLUMAGE OBSERVED IN SEVERAL SPECIES OF BIRDS.

BY GEO. N. LAWRENCE.

As it might be of interest and call forth similar observations by others, I have concluded to put on record the instances that have

come under my notice of abnormal coloring in several species of birds. Mr. Ruthven Deane (Vol. I, No. 1, of the Bulletin of he Nuttall Orn. Club) has an interesting paper on albinism and melanism among North American Birds. The cases to which I am about to call attention would seem to proceed from quite a different cause from that producing albinism or melanism.

In 1862 (Ann. Lyc. of Nat. Hist., Vol. VII, p. 475) I described as new a Parrot from Panama, under the name of *Psittovius subcæruleus*; this specimen, in its general plumage, is of quite a uniform pale blue, and in color differs from any other American Parrot.

When Dr. Otto Finsch of the Bremen Museum was preparing his great work on the Parrots ('Die Papageien') published in 1865, he requested to see certain specimens of the family in my collection; with this I complied, sending the above-named specimen with others. At that time he considered *P. subcæruleus* to be a valid species and gave a figure of it in his book.

In 1871 (Ibis, p. 94) Mr. Salvin says of this specimen: "Dr. Finsch considers this bird to belong to a good species. For my own part, without having seen the original specimen, I cannot but think that the blue coloring of the plumage is accidental, and due to a deficiency in the yellow element of the normally green color of the feathers. Mr. McLeannan, who shot the specimen from which Mr. Lawrence took his description (the only one, I believe, that has ever been obtained) considered it only a variety of *B. tovi*, with individuals of which species he found it associating. I notice that in some specimens in our series of *B. tovi*, the feathers of the back are bluer than in others. *B. subcærulea* may only show an extreme development of this tendency."

Several years have elapsed since this specimen was described, and no similar ones have been obtained.

Mr. Salvin has offered two plausible theories to account for the peculiar plumage of this Parrot.

Since then, what I consider to be a very similar case, has come immediately under my notice, which induces me to think there is a cause for the last theory advanced by Mr. Salvin. A brood of Canary Birds was raised by a member of my family, in which there was a great disparity of colors. The male parent bird was of a very light yellow, with pure white wings and tail, the female was of a dark greenish color (of the variety known as

green Canaries). One of the brood was entirely white, the other three were all of the dark green color of the mother, without a particle of white in their plumage.

I recollect that the idea then occurred to me, that all the white element of color from the male was concentrated in one individual of the brood, which should have been disseminated to some extent among the others. I did not consider the white bird to be an albino, and as it was very beautiful we intended keeping it, supposing it to be a male, but soon after being fully fledged, it unfortunately escaped. The others we thought were probably females, and having no claims to beauty they were given away.

For the case of the Parrot to be parallel to that of the Canaries, all the others of the brood should have been without any blue color, but that they were so can only be a matter of conjecture.

Another instance of the blue color being predominant, is that of a specimen of *Vireolanius* which was sent me from the Smithsonian Institution some years ago, as possibly a new species. I found it to be an abnormally colored example of *V. pulchellus*. The usual plumage of this species is as follows: above of a rather light clear green; the head and hind neck light blue; the under plumage of a pale yellowish green; the throat and inner margins of the quills pale yellow. The specimen under examination is of a uniform light blue color above, and of a pale whitish blue below; the throat and inner margins of the quills whitish. This seems similar to the two cases above mentioned.

For quite a long time I have had in my possession an example of *Procnias tersa*, which is entirely of a clear light yellow—much resembling a Canary Bird in color,—and having a few very pale dusky bars on the sides. These bars, although nearly obsolete, enabled me to determine the species, as they are a strongly marked character, in the normal plumage of both sexes. In the regular plumage of the female of this species, the only yellow color is on the abdomen and under tail coverts, the rest of the plumage being green. The male is verdigris-blue, with a white abdominal stripe, and no yellow whatever in its plumage. I can only attribute this abnormal coloring to a similar cause to that which produced it in the other cases.

I procured in Fulton Market, a specimen of *Tympanuchus americanus*, male, which was of an unusual color. The rufous coloring which exist in the neck tufts, and in some individuals

in the upper plumage, of all normally colored birds, pervades nearly the entire plumage of this specimen. All the usually light markings are tinged with bright light rufous; the entire under plumage is deep rufous; the dark bars and the under tail coverts are of the usual color; the neck tufts are deep rufous tipped with black, none of the feathers being light buff as some of them are in normally colored birds; the throat is tinged with rufous. It was in good condition, weighing 2¼ pounds. The rufous coloring of this specimen may be due to the same cause as in the preceding cases, but perhaps it is open to doubt.

The inference seems a fair one, that sometimes from some unknown cause, a certain color which is normal in a species, or in one of the parents, is concentrated in one individual of a brood, to the exclusion of it from the others.

The great change of plumage—which was a gradual one—in the bird about to be described, is due to a very different cause. Several years ago, a green Parrot was received at the Central Park Menagerie, to which Mr. Conklin called my attention, as it was marked with a few conspicuous scarlet and yellow feathers. As it was in one of their large wire enclosures, I could not examine it closely, and for some time was unable to determine the species. I found it to be an example of *Chrysotis vittata*, the body of which in its normal plumage is entirely green, except that it has a narrow band of scarlet on the front. I watched it with much interest, as I found that most of the feathers were gradually changing color. It was two or three years before it died, when Mr. Conklin sent it to me. By that time the scarlet and yellow coloring had increased so much as to occupy the entire plumage of the body, except the head and neck, and these are marked with scattering feathers of scarlet. If it had lived a little longer all its plumage would probably have been scarlet and yellow, except the wing and tail feathers. The scarlet coloring much exceeds that of the yellow; the specimen is of brilliant plumage.

Dr. A. B. Meyer has an article (Sitzungb. Kön. Preuss. Akad. Wissensch. Berlin, 1882, No. 24) on this change of plumage, which he terms "xanthochromism in Parrots." In referring to this paper the editors of the Ibis (1883, p. 116) say: "Hence xanthochromism in Parrots seems, to a certain extent, to supplant the albinism of other birds."

My opinion is, that the change is caused by the birds being in confinement.

In the Maximillian collection, now owned by the American Museum of Natural History, there is an example of a Parrot—also normally green—in which most of the feathers have changed to yellow; it is labelled "*Chrysotis amazonica* var. *domestica*." I think from the name, it is evident that Prince Maximillian considered the yellow coloring of this Parrot to be due to domestication.

NOTES ON THE BIRDS OF WHITE TOP MOUNTAIN, VIRGINIA.

BY WILLIAM C. RIVES, JR., M. D.

THE WHITE TOP and Balsam Mountains in southwestern Virginia, are the loftiest in the State, and none of equal elevation lie between them and New England. They may be regarded as forming the limit to the northward of the 'Land of the Sky,' for although wholly in Virginia, they are within a short distance of the North Carolina line and are directly adjacent to its mountain region. The altitude of White Top was given by Professor Guyot as 5530 feet, but according to the more recent observations of the U. S. Geological Survey its height is 5673 feet, and that of the Balsam (also called Mt. Rogers) 5719 feet.

The former mountain may be easily reached by means of a road which runs from Seven Mile Ford on the Norfolk and Western Railway, over its eastern shoulder into Ashe County, North Carolina. With the intention of visiting it, our party left Glade Spring, a station on the railway at the height of 2088 feet, on July 25, 1888, and arrived the same evening at Miller's, a few hundred feet below the highest point. Among the birds noticed on the journey, I caught a glimpse, while crossing the Iron Mountain about 4000 feet high, of one which appeared to be a Chestnut-sided Warbler (*Dendroica pensylvanica*). About the lower part of White Top grow many magnificent trees, oaks, sugar maples, poplars (*Liriodendron tulipifera*) of remark-

able height, hemlocks, beeches and various lesser kinds, among them a species of mountain magnolia. Deciduous trees, even of large dimensions, are to be found nearly up to the summit. One birch tree of unusual size, less than a thousand feet from the top, we measured roughly, and estimated its circumference at twenty-three feet. On its southern exposure, the crown of the mountain is a beautiful grass field, affording excellent grazing for cattle and a congenial place for the numerous Snowbirds in which to construct their nests. On the northern side it is wooded and somewhat precipitous, while the extreme summit is covered with a thick growth of a species of balsam known locally as the lash-horn, and is carpeted with beds of moss and the pretty flowers of *Oxalis acetosella*, strongly reminding one of the Adirondack woods.

As my stay was short, three nights only being spent at Miller's, my ornithological investigations were chiefly confined to the upper 1000 feet of the mountain, which, it might be supposed, would be of special interest. *Junco hyemalis carolinensis* was, as I have intimated, abundant, and, I was informed, breeds there plentifully, the nests being usually found in the grass field I have referred to. I was shown one nest in a depression in the grass near the summit, containing three young birds recently hatched, and was told that one containing eggs had been seen the preceding Saturday, July 21. These were of course second broods. The feeble lisping notes of the Golden-crowned Wrens (*Regulus satrapa*) betrayed their presence, in the lashhorns at the top, and they proved to be quite common, sharing that elevated abode with a few Black-throated Green Warblers (*Dendroica virens*). The latter birds were exceedingly common lower down, being numerous among the deciduous trees, and not at all confined to the balsams, as Mr. Brewster found them on the Black Mountain. The Black-throated Blue Warbler (*Dendroica cærulescens*) was not very common, not nearly so much so as *D. virens*, which was perhaps partly due to the comparative absence of large laurel brakes from this part of the mountain, although even in apparently suitable localities they were not abundant. One or more Blackburnian Warblers (*Dendroica blackburniæ*) were also observed, and were, I suspect, not uncommon, and the Black-and-white Creeper (*Mniotilta varia*) was seen quietly occupied as usual in its industrious

search for food. I was surprised not to find the Canada Warbler (*Sylvania canadensis*).

The fine mountain variety of the Blue-headed Vireo (*Vireo solitarius alticola*) was common in the woods, and I frequently heard their pleasing notes, varied occasionally with the peculiar unmusical sounds which Vireos are in the habit of making.

Brown Creepers (*Certhia familiaris americana*) were seen about the hemlocks growing on the edge of a laurel brake. A Downy Woodpecker (*Dryobates pubescens*) was noted, and a rather large-sized Hairy Woodpecker (probably *villosus*). The Red-bellied Nuthatch (*Sitta canadensis*) was rather common although shy; its presence was often disclosed by its *āānk āānk*, when by carefully looking for the source of the notes the little bird would frequently be seen hopping along some tree trunk or its branches after its characteristic fashion. Robins (*Merula migratoria*) were to be found even above 5000 feet, as not far from the top I caught a young bird in my hand, greatly to the distress of the parent bird which uttered vigorous complaints until I let it go. I had a glimpse of a Ruffed Grouse (*Bonasa umbellus*) which, I believe, is not uncommon. I was unable to identify any Ravens, but on inquiring learned that they were often seen in this region, the difference between them and the Crows, which are also to be met with, being distinctly recognized. I noticed two Turkey Buzzards (*Cathartes aura*) sailing about in the air at a considerable height.

An animal described to me under the somewhat mysterious name of 'mountain boomer,' proved to be nothing more alarming than *Sciurus hudsonius*. It was quite common, and was an additional indication of the Canadian character of the fauna. On the day of leaving the mountain my attention was attracted by the melodious song of a bird whose notes I did not recognize. I psent some time in trying to obtain sight of it, but in vain, although at times it must have been within a short distance. It was not improbably the Winter Wren (*Troglodytes hiemalis*), with whose song I had not previously had the opportunity of making myself familiar.

The Balsam, its dark crest covered with coniferæ, of which it has a much more extensive growth than White Top, adjoins that mountain on the east, and an excursion to it might have disclosed other interesting species; it seems, however, to be rarely visited,

and the long and hard ascent with little or no path would have needed more time than I had to devote to it.

On the descent of White Top I heard a Quail (*Colinus virginianus*) at an elevation of 4500 feet; it is common in the lower country where I saw one and heard others whistling. I observed a Yellow-bellied Woodpecker (*Sphyrapicus varius*) above 4000 feet. In a clearing at the base, there were some Chimney Swifts (*Chætura pelagica*). In the country between the upper part of the mountain and the railway, or at Glade Spring and its vicinity, were noticed the Yellowbird, Dove (one of which was seen sitting on its nest), Catbird, Red-headed and Golden-winged Woodpeckers, a number of Purple Martins, the Kingbird, Ruby-throated Hummingbird, Barn Swallow, Indigo-bird, Green Heron, Spotted Sandpiper, and some other species, and the notes of the Wood Pewee and Maryland Yellow-throat were heard.

A NEW NAME FOR THE SPECIES OF *SPOROPHILA* FROM TEXAS, GENERALLY KNOWN AS *S. MORELLETI.*

BY GEORGE N. LAWRENCE.

Sporophila morelleti sharpei.

Spermophila albigularis LAWR., nec SPIX.
Spermophila morelleti SCL., nec BP.
Spermophila parva SHARPE, nec LAWR.

I described this species in 1851 (Ann. N. Y. Lyc. Nat. Hist., Vol. V, p. 123) as an inhabitant of Texas, under the name of *Spermophila albigularis* Spix. Mr. P. L. Sclater (P. Z. S., 1856, p. 302) decided that it was not different from *S. morelleti*, Bp. (Cons. Av., Vol. I., p. 497). With this decision I did not feel satisfied, as none of the numerous specimens received from Texas had the black band on the throat, which exists in the full-plumaged male of *S. morelleti*. It has thus remained until Mr. Sharpe in his investigation of the Fringillidæ for Volume XII of the British Museum Catalogue, at page 124, considered it to be

identical with my *S. parva* from Western Mexico (Ann. N. Y. Acad. Sciences, Vol. II, p. 382), and as it could not retain the name of *abigularis*, placed it under *S. parva*.

With his determination I cannot agree, and am sustained in my opinion by all our ornithologists to whom the specimens have been submitted.

Besides being from very different localities, the two species appear to differ as stated below. The type of *S. parva* being a female, I have made the comparison with specimens of that sex.

Four fine female specimens from Lomita, Texas, kindly loaned me by Mr. G. B. Sennett, are all at first sight larger in appearance than *S. parva*, though the wings of each species are of the same size; the wing-coverts of *S. sharpei* are whitish at their ends, forming two decided bars across the wings, whereas in *S. parva* only the middle coverts end in whitish, though more narrowly, and the greater coverts have their sides and ends margined with duller white; in *S. parva* the tertiaries are more conspicuously margined with dull white than those of *S. sharpei;* the upper plumage of *S. parva* is of a warm light brown, that of *S. sharpei* being decidedly ash-colored; the entire under plumage of the latter is of a light fulvous color, that of *S. parva* being whitish with just a tinge of fulvous on the breast; the taie of *S. parva* is shorter and the feathers are much broader; the bill of *S. parva* is lighter in color than that of *S. sharpei*.

The most mature males of *S. sharpei* are grayish above, with the crown and sides of the head black, and the back blotched with black; the under parts are pale fulvous white with an indistinct collar of black, though this latter character is seen in but few specimens.

In the true *S. morelleti* the upper plumage is jet black, with the rump more conspicuously pale fulvous, than in *S. sharpei;* the under plumage is light fulvous, with a strongly marked black collar across the lower part of the throat and the upper part of the breast. Types in American Museum of Natural History, New York. In my opinion the Texas bird requires to be named, and I have conferred upon it that of my friend, Mr. R. B. Sharpe, as he is the only one who has recognized it as being distinct from *S. morelleti* Bp., based on Guatemalan specimens.

SIXTH CONGRESS OF THE AMERICAN ORNITHOLOGISTS' UNION.

THE SIXTH CONGRESS of the American Ornithologists' Union was held in the Lecture Room of the U. S. National Museum, Washington, D. C., Nov. 13-15, 1888, the President in the Chair. The meeting was attended by twenty Active Members, and seventeen Associate Members, making a total attendance of thirty-seven, a number considerably in excess of the attendance at any previous Congress of the Union.

The Secretary's report comprised, besides the usual statistics relating to membership, a concise review of the work of the Union during the five years of its existence, showing how great has been its influence on the progress of ornithology in North America. The membership of the Union was stated to be as follows:— Active Members, 45; Honorary Members, 25; Corresponding Members, 65; Associate Members, 159. The Union had lost by death during the year one of its founders, Dr. Joseph B. Holder,* five Corresponding Members, and three Associate Members. The Corresponding Members were Dr. Modest N. Bogdanow † of Moscow, Mr. Harry Pryer ‡ of Yokohama, Colonel N. Prjevalski § of St. Petersburg, Count A. F. Marschall § of Vienna, and Mr. Henry Stevenson§ of Norwich, England; the Associate Members were Mr. Charles W. Beckham ‖ of Washington, Mr. Thure Kumlien¶ of Milwaukee, Wisc., and Prof. Charles Linden** of Buffalo, N. Y.

The Treasurer's report upon the finances of the Union showed for the first time a small balance in the treasury, 'The Auk' having proved self-sustaining.

The report of the Council covered various matters of business, which were later duly acted upon as noted in the department of 'Notes and News' in the present number of 'The Auk.'

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* See Auk, Vol. V, April, 1888, p. 220.

† See Auk, Vol. V, 1888, p. 333.

‡ Ibid., p. 332.

§ For obituaries see 'Notes and News' of the present number of 'The Auk.'

‖ See Auk, Vol. V, 1888, p. 445.

¶ See 'Notes and News' of the present number of 'The Auk.'

** Auk, Vol. V, 1888, p. 220.

The election of officers resulted in the re-election of the incumbents of the previous year, except that in the Council Mr. Thomas McIlwraith was elected as the Canadian representative, Mr Chamberlain, who had hitherto filled the position, at present living in the United States. Four Active Members were elected, as follows: Walter E. Bryant, of San Francisco, Cal.; Frank M. Chapman, Assistant in Ornithology at the American Museum of Natural History, New York City; Lyman S. Foster, of New York City; Gurdon Trumbull, of Hartford, Conn. Five Corresponding Members were also elected, as follows: Anastasio Alfaro, San José, Costa Rica (Director of the Costa Rica National Museum); Sandford B. Dole, Honolulu, Hawaiian Islands; Harry V. Henson, Yokohama, Japan; Valdemar Knudsen, Kanai, Hawaiian Islands; Frederic Ringer, Nagasaki, Japan.

One hundred and ten Associate Members were elected.*

The usual reports of progress were made by the several standing committees. Dr. Merriam, Chairman of the Committee on the Geographical Distribution and Migration of North American Birds, gave an extended account of the work as now carried on under his direction as a part of the work of the Division of Economic Ornithology and Mammalogy of the U. S. Department of Agriculture, very fully explaining and illustrating the methods of investigation adopted, by means of maps, diagrams, and systematically arranged data. He announced that 'Bulletin No. 2,' consisting of Prof. W. W. Cooke's 'Report on Bird Migration in the Mississippi Valley in the years 1884 and 1885,' was printed and about ready for distribution (since issued†), and that 'Bulletin, No. 1,' on the House Sparrow, was in press. Several other 'Bulletins' on special subjects are already in an advanced stage of preparation.

Dr. Coues, Chairman of the Committee on Avian Anatomy, read a report prepared by Dr. Shufeldt, Secretary of the Committee, on the work of the latter during the past year.

In the absence of the Chairman of the Committee on the Protection of North American Birds, Mr. George B. Sennett, Mr. Allen made a brief report of the work of the Committee, which was

* The names of the new Associate Members, so far as they have qualified to date, will be found in the membership lists issued with the present number of 'The Auk.'

† See the present number of 'The Auk,' p. 58.

supplemented by remarks from two other members of the committee, namely, Col. N. S. Goss of Kansas and Mr. William Dutcher of New York. Efforts were being made to influence legislation in the direction of more efficient legal protection for birds, and the Committee was also continuing its good work of enlightening the public by the dissemination of much needed information on the subject of bird protection.

In the absence of Dr. George B. Grinnell, Chairman, Mr. Dutcher read the report of the Committee appointed last year to co-operate with the Committee of the New York Academy of Sciences in procuring funds for the erection of a suitable monument to the memory of Audubon. The report stated the action of the Committee in the matter and the amount of funds raised for the object in question.

Two days of the session were wholly devoted to the presentation and discussion of scientific papers. Several of them proved of special interest, leading to protracted and profitable discussion. At the close of the third day a number were read merely by title, owing to the lack of time for their presentation in full. A list of the papers is as follows, those read simply by title being marked with a star.

The Shape of the Bill in Snail-eating Birds, by Prof. W. B. Barrows. Additions to his List of Kansas Birds, with Notes on their Habits, by Col. N. S. Goss. Notes on the Birds of the Magdalen Islands, by Dr. L. B. Bishop. The Eastern Margin of the Habitat of *Sturnella neglecta*, by Prof. J. W. McGee. Bird Notes from Little Gull Island, N. Y., by Basil Hicks Dutcher. Notes on the Destruction of Grasshoppers by Flocks of Swainson's Hawks, by Dr. C. Hart Merriam. Bird Notes from Long Island, N. Y., by William Dutcher. The Flight of Birds, by Dr. Elliott Coues. Food of the English Sparrow, by Prof. C. V. Riley. The *Helminthophilæ* in Connecticut during the Spring of 1888, by Dr. L. B. Bishop. Notes on *Spizella arenacea*, by Dr. C. Hart Merriam. On the position of *Chamæa* in the System, by Dr. R. W. Shufeldt (read by Dr. Coues). Notes on the Nesting Habits of Leach's Petrel, by Dr. L. B. Bishop. Graphic Representation of Bird Migration, by Witmer Stone (read by Mr. Thompson). On Studying the Habits of Birds, by Ernest E. Thompson. Remarks concerning the Destruction of Multitudes of Small Birds near the South End of Lake Michigan

by a Storm which Overtook them in Migration, in May, 1888, by Dr. C. Hart Merriam. The Relationship of the Large Florida Herons, by W. E. D. Scott. Notes on a Collection of Birds from the Vicinity of Quito, by J. A. Allen. On a Collection of Birds made in Bolivia by Dr. H. H. Rusby, with Field Notes by the Collector, by J. A. Allen. *The Booming of the Bittern, by Bradford Torrey.† *Remarks on the Three-toed Woodpeckers, by Dr. L. Stejneger. *Nesting Habits of Clarke's Crow, by Capt. C. E. Bendire. *Notes on the Southern Breeding Range of *Pinicola enucleator*, by Philip Cox. *The Anhinga, by Col. N. S. Goss. *The Main Divisions of the Swifts, by F. A. Lucas.† *The Summer Birds of Berkshire Co., Mass., by Walter Faxon.†

The meeting proved, in point of attendance and in the number and character of the papers presented, the most successful thus far held, and from a social point of view left little to be desired, the Washington members giving their visitors a most cordial welcome. On Tuesday evening a reception was given them by Dr. and Mrs. Coues, and another on Wednesday evening by Dr. Merriam and Mr. Henshaw.

It was voted to hold the next meeting in New York City, on the second Tuesday in November, 1889.

RECENT LITERATURE.

Cooke's 'Report on Bird Migration in the Mississippi Valley.'‡—This Report forms 'Bulletin No. 2' of the Division of Economic Ornithology of the U. S. Department of Agriculture—a work that has been long and "clamorously" awaited. To quote from the editor's 'Prefatory Letter,' the report "consists of two parts: (1) an introductory portion treating of the history and methods of the work, together with a general study of the subject of Bird Migration, including the influence of the weather upon the movements of birds, the progression of bird waves and causes affecting the same, the influence of topography and altitude upon migration, and the

† Published in the present number of 'The Auk.'

‡ U. S. Department of Agriculture. | Division of Economic Ornithology. | Bulletin No. 2. | — | Report | on | Bird Migration | in the | Mississippi Valley | in | the years 1884 and 1885, | by | W. W. Cooke. | — | Edited and Revised by Dr. C. Hart Merriam. | — | Washington: | Government Printing Office. | 1888. 8vo, pp. 313, with Map.

rates of flight in the various species; and (2) a systematic portion in which the five hundred and sixty species of birds known to occur in the Mississippi Valley are treated serially, the movements of each during the seasons of 1884 and 1885 being traced with as much exactness as the records furnished by the one hundred and seventy observers in the district permit."

The labor of elaborating and compiling this report has evidently been very great, not only the data from this large number of field observers having been collated, but much matter relating to distribution having been incorporated from published sources. Part II thus contains a very large amount of information bearing upon the migrations and breeding ranges of the birds found in the Mississippi Valley.

Under the head of 'Theoretical Considerations' (pp. 11, 12), the author states his belief that the autumnal migration is "the result of two causes—the approach of winter and the failure of the food supply," and that the spring migration is due to "a strong home love—an overpowering desire to be once more among the familiar scenes of the previous summer." In respect to the autumnal migration, it is considered obvious that the failure of the food supply is the primary cause of the movement, "since it is well known that single individuals of species which retire far to the south often remain behind, and, favored by an abundance of food, withstand the most severe weather." The impulse that leads to the return of birds in spring to their summer homes is doubtless not to be wholly accounted for by what has been called "love of home," to which theory the editor in a footnote (p. 11) takes strong exception. He attributes this movement to failure of "the food supply," to unfavorable "climatic conditions," "to physiological restlessness" induced by "the approach of the breeding season,' and to an inherited "irresistible impulse to move at this particular time of the year." The reasons given for the autumnal movement clearly afford a satisfactory explanation, since in most instances were migratory species to remain in winter at their accustomed breeding grounds few would escape total extinction. The reasons for the return movement are more complex and less obvious. Lack of food can hardly be assumed as one of them. Increase of temperature at their winter quarters, as spring advances, must render the lower latitudes at this season uncongenial, and at the same time awaken the periodic activity of the reproductive system, which "gives rise to physiological restlessness," and imparts "the irresistible impulse to move at this particular season of the year" toward the breeding habitat of the species. While it is assumed that birds are directed thither by the "unerring instinct" of "inherited memory," the ultimate choice of a particular district by the different individuals may be determined by a true home love, which beyond question leads birds to the same fields and nesting trees for many successive years, and possibly also their descendents for generations.

If, however, we may reason from birds to migratory fishes, whose migrations are quite as exact and methodical as those of birds, it would seem that there is still something to explain in regard to the return of birds

to practically the same locality year after year to breed. In the efforts of the Fish Commission to restock our exhausted rivers with fish it has been found that such migratory species as the shad, when placed as fry in rivers remote from the habitat of their parents, return the next year not to the home of their ancestors, as 'inherited habit' would seem to demand, but to the very rivers where they were turned out as fry. Such phenomena seem to introduce a new problem into the question which may well receive serious consideration.

Migration, as is well known, is by gradual stages, occupying many weeks, and often several months, and is largely influenced by meteorologic conditions, which govern the ever varying rate of progress, periodically accelerating or holding in check the onward movement, and giving rise to what are known as waves of migration. The beginning of return migration in spring is coincident with the first 'warm wave,' which may occur earlier or later according to the season. This first advance is usually soon checked by a falling temperature, and the movement remains stationary during its continuance, the retardation being governed by the length and intensity of the period of cold. With an immediately succeeding warm wave the northward journey is resumed, to again soon receive a more or less decided check by an alternating cold wave; and so on, with a greater or less number of repeated checks and impulses, till the various species of migratory birds have reached their summer homes. While all this has long been known in a vague way, Professor Cooke has now given us the history of the spring migration during the years 1884 and 1885 for a large number of birds inhabiting or passing through the broad region of the Mississippi Valley, and has traced in detail many 'bird waves,' with their concomitant meteorologic conditions. It is thus demonstrated that in general the migratory movements of birds in spring are governed by atmospheric changes, notably the alternation of warm and cold waves, the former favoring and the latter retarding or wholly checking movement, according to their severity. As these alternating cold and warm atmospheric waves depend upon atmospheric pressure,— the direction of winds being toward an area of low barometer,— and pass across the country from the west toward the east, warm winds blow from the south over the region south of a 'storm centre' or area of low barometer. Thus the waves of bird migration during the spring movement are not only necessarily from the south northward, but are coincident with a warm atmospheric wave and a southerly wind; and the wave of migration varies in magnitude with the duration of the warm atmospheric wave and its intensity as regards temperature.

While these are the favorable conditions for bird migration, birds move more or less under the ordinary conditions of the weather proper to the season, and are only held in check by the unfavorable conditions of a cold wave, accompanied by northerly winds and a sometimes fatal reduction of temperature.

Professor Cooke gives the average rate of movement of certain birds based on the data collected, from which it appears that the Baltimore Oriole

passed from Rodney, Miss., to Oak Point, Manitoba, a distance of 1298 miles, in 48 days, giving an average rate of progress of 27 miles per day. The records for 58 species during the spring of 1883 give an average rate of 23 miles per day. But of course the rate of progress is not uniform for even the same species, it being greater over the northern portion of the route than over the southern, and much greater during some days than others, according to whether the conditions for movement are favorable or otherwise. Also, as would be expected, the late migrants move more rapidly than the early ones.

While Professor Cooke has thus thrown much light upon the manner and coincident phenomena of migration, and made a most valuable contribution to our knowledge of the subject, his limitations in respect to the quality and number of the data at hand give a somewhat pioneer character to his work. His observers were too few and the greater part too untrained to give a satisfactory basis for the task so energetically undertaken; yet his report is a remarkably successful effort, considering the embarrassing circumstances under which he has labored; and we believe that the editor, in his prefatory letter, does not overrate its importance in considering it "the most valuable contribution ever made to the subject of Bird Migration." It gives one a vivid forecast of what may be looked for in forthcoming reports on the same subject, based on the work of many more observers, covering a much longer period.

In closing this notice it would be a grave omission not to call special attention to the model work of Mr. Otto Widmann at St. Louis (see pp. 33-37), and also the important assistance rendered by Prof. D. E. Lantz, of Manhattan, Kansas. A dozen observers like Mr. Widmann, scattered at proper intervals, would give a fairer basis for generalizations than hundreds of observers of the grade on whom Professor Cooke was obliged to depend for many of his data. This should stimulate the more experienced and well qualified field ornithologists to contribute to the fullest degree possible to the furtherance of this important investigation.—J. A. A.

Nelson's Report upon Natural History Collections made in Alaska.*—Following close upon Mr. Turner's 'Contributions to the Natural History of Alaska' (see Auk, Vol. V, pp. 409, 410) comes Mr. E. W. Nelson's 'Report' upon his natural history work in the same Territory during the years 1877–1881. Two thirds of this carefully prepared volume, or some 210 pages and 12 colored plates, relate to Alaskan ornithology. Mr. Nelson arrived at St. Michaels, June 17, 1877, which place was his headquarters, and where he passed the greater part of his time, till the last of

* Report | upon | Natural History Collections | made in | Alaska | Between the years 1877 and 1881 | by Edward W. Nelson. | — | Edited by Henry W. Henshaw. | — | Prepared under the direction of the Chief Signal Officer. | — | No. III. | Arctic Series of Publications issued in connection with the Signal Service, U. S. Army. | With 21 Plates. | — | Washington: | Government Printing Office. | 1887 [= 1888]. 4to., pp. 337. (Birds, pp. 19–230, pll. i-xli, colored.)

June, 1881. Two months of the winter of 1877-78 were spent in exploring the Lower Yukon River and the adjacent coast region. In May, 1879, a trip was made to the Yukon delta, and in February, 1880, a long journey was made up the coast to Sledge Island, situated just south of Bering Straits. In November of the same year an extended expedition into the interior was undertaken, during which the Anvik River country and the region about the head-waters of the Innoko River were explored. While the principal object of these expeditions was the study of the ethnology of the districts visited, zoölogy and geography received much attention. Finally, in the summer of 1881, Mr. Nelson made a trip on the U. S. Revenue Steamer 'Corwin,' as naturalist of the expedition, to Bering Sea and the Siberian Coast. The collections gathered at Saint Michaels and on the various expeditions in Alaska, included "over two thousand bird skins and fifteen hundred eggs." The author says, "To complete the report I have made free use of the skins contained in the Smithsonian collections, obtained by other collectors in Alaska, and the literature on that region has yielded many notes and facts of interest. The author's aim has been so far as possible to embody herein all of importance that is known concerning the birds of Alaska, but for unavoidable causes he has been compelled to curtail that portion relating to the swimming birds subsequent to the ducks and geese."

Mr. Nelson's expeditions entailed great exposure and hardship, with most lamentable results to his health, which gave way very soon after his return to Washington in November, 1881. When compelled to desist from work and seek a more favorable climate in the far West, his ornithoogical report was well advanced toward completion, but the final touches, and the revision its long-delayed publication has occasioned, had to be made by another hand. This revision and the editorial supervision fortunately fell to Mr. H. W. Henshaw, who appears to have given very careful attention to the final preparation and publication of the work.*

The 'Introduction' to Mr. Nelson's report treats of the 'General Character and Extent of Alaska, with the Faunal Subdivisions,' of which four are recognized, as follows: 1. Sitkan District, strictly limited to the coast directly affected by the warm southward-flowing Japanese current. 2. Aleutian District, consisting of the Aliaska Peninsula and the Aleutian chain of islands. 3. Alaskan Arctic District, limited to the narrow treeless coast belt along the Arctic coast. 4. Alaskan-Canadian District, embracing the wooded interior.

The number of species treated is 267 (if we have counted them correctly—they are not serially numbered), the text devoted to each varying from a few lines to several pages, largely based on the author's specimens and field notes. The life history of many of the species is treated at length, as is especially the case with several of the Puffins, Geese, Ducks, Phalaropes, Sandpipers, Ptarmigans, etc., from the standpoint

*It appears that the results of Mr. Nelson's ethnological work will form the subjec of a special volume on the preparation of which he is still engaged.

of the writer's personal experience with them, these biographies being, moreover, very pleasantly written. The immature and other special plumages of many of the species are also described at length. The twelve plates, drawn by Messrs. R. and J. L. Ridgway, are not satisfactory productions, the original colored drawings having been very faultily rendered by the lithographer.

Besides the extended bird matter, the work contains a very important report on the mammals, with the identifications and technical notes by Mr. F. W. True; another on the fishes, with notes by Dr. T. H. Bean; and a third on the Diurnal Lepidoptera, in conjunction with Mr. Harry Edwards.—J. A. A.

Jordan's New Manual of Vertebrates.*—The fifth edition of President Jordan's 'Manual of the Vertebrates' of the northeastern United States is practically a new work, not only being entirely rewritten and greatly enlarged, but so far extended in scope as to take in not only a considerably enlarged area (Missouri, Iowa, Minnesota, and the Provinces of Canada), but the marine species of the Eastern Coast from North Carolina to Nova Scotia. While presenting the same size and appearance externally as former editions, it contains probably double the amount of text, through the use of smaller type and a much larger type bed. The plan of the work is also essentially modified, and its general character greatly improved, through the fuller diagnoses given, and the analytical keys being based on structural characters instead of on artificial distinctions. The order of arrangement is also inverted, the fishes being treated first and the mammals last. The latest conclusions seem to be given in respect to questions of classification and nomenclature, and the work thus authoritatively brought down to date. For birds the arrangement and nomenclature of the A. O. U. Check-List is adopted. The reception given former editions shows that the work meets a want, which the new edition must fill to a much greater degree than has been the case heretofore, thus rendering the 'Manual' still more worthy of the large patronage it is sure to receive. The bird part is especially to be commended, in so far as such limited space can give salient and distinctive characters, it being indeed a *multum in parvo*.—J. A. A.

Sharpe's Birds in Nature.†—The present volume is elegantly gotten up, as regards typography, paper, and exterior, with elaborate designs in

*A Manual of the Vertebrate Animals of the United States, including the District north and east of the Ozark Mountains, south of the Laurentian Hills, north of the southern boundary of Virginia, and east of the Missouri River, inclusive of Marine Species. By David Starr Jordan, President of the University of Indiana. Fifth Edition, entirely rewritten and enlarged. Chicago: A. C. McClurg and Company. 1888. 8vo, pp. iii + 375.

†Birds in Nature. By R. Bowdler Sharpe, F. L. S., F. Z. S., Zoölogical Department, British Museum, etc., etc., etc. With Thirty-nine Colored Plates, and other Illustrations, by P. Robert. Boston: Estes & Lauriat. 1888. 4to. pp. v + 78.

the way of initial letters and tail-pieces for each chapter, and with full-page plates redundant in paint. The book is apparently intended as an ornamental gift-book for the holiday season. The text is no discredit to the eminent author whose name appears on the titlepage, and his biographies of the forty species of European birds treated form entertaining and instructive matter for the general reader, for whom they were doubtless intended, rather than for professional ornithologists. Mr. Robert's contribution of plates and tail-pieces will scarcely bear criticism from the technical standpoint, most of them having been too evidently copied from rather badly stuffed museum specimens, including their defects, with a back-ground which may be called striking rather than artistically effective. Doubtless the book will not lack admirers among the class it is intended to entertain.—J. A. A.

Birds of Nova Scotia.* — This annotated list is the latest contribution to the bird lore of the peninsular Province, by one whose name is already known in that connection. Mr. Downs has given us "as the result of sixty-six years of *practical field work*," a list of 240 species of birds, of which 4 are added on authority, 3 on the grounds of probability, and 3 without a word of comment, reducing those presumably observed by the writer to 230. The number seems very small, as it would be an easy matter to name over twenty additional species that certainly should have been found; indeed reference to the published papers of another Acadian naturalist (Dr. J. Bernard Gilpin) shows that nearly a dozen species have been omitted in the Birds of Prey and the Shore-birds alone. It is difficult to understand why Mr. Downs should leave out such species as the Wheatear, Bicknell's Thrush, Ipswich Sparrow, etc., since he was not confining himself to his own personal observations. The last-named omission is the more strange since the species is probably without exception the most peculiar and characteristic of the whole Acadian avifauna. Our author apparently not realizing that the only value of such a list must come from its explicitness and accuracy, records without qualification such remarkable occurrences as those of *Plegadis autumnalis*, *Anas penelope*, *Ardea cærulea*, etc., omitting the usual data and references, without which the records have little, if any value. This carelessness with regard to localities and dates neutralizes the value of what might otherwise have been a most interesting series of records. A notable example is his brief reference to the finding of three "Great Auks"; doubtless the facts have been recorded elsewhere, but no careful writer would think of embodying them in his work without giving the proper references. Similar remarks will apply to his notes on the Labrador Duck, Purple Gallinule, Blue Grosbeak, and several other species.

His method of indicating the breeding species (by number in an appendix) is a great mistake; the remarks that are supposed to be thus tabu-

*Birds of Nova Scotia. By Andrew Downs, M. Z. S. Edited by Harry Piers. Proc. and Trans. Nova Scotia Inst. Nat. Sci. VII, pt. ii, 1888, pp. 142-178.

lated, should have appeared in full under the names of the species to which they refer.

The general appearance of the article is excellent, and the typography almost beyond criticism, while the reserve stores of information hinted at by the brief notes are such that we cannot but hope that in the near future we may be favored with a more carefully compiled and fully annotated list that will do yet greater credit to one who has had sixty-six years of practical field work and was the correspondent and friend of Audubon and Waterton.—E. E. T.

Publications Received. — **Barboza** du Bocage, J. V. (1) Sur quelques Oiseaux de l'Ile St. Thomé. (Jor. de Sci. Math. Phys. e Nat. de Lisboa, XLVIII, 1888.) (2) Oiseaux nouveaux de l'Ile St. Thomé. (Ibid.)

Bryant, W. E. Description of a new subspecies of Song Sparrow from Lower California, Mexico. (Proc. Cal. Acad. Sci., 2d Ser., I, pp. 197-200.)

Jordan, D. S. A Manual of the Vertebrate Animals of the Northern United States, etc. 5th edition. 8vo., pp. iii + 375. Chicago: A. C. McClurg & Co. 1888.

Lawrence, G. N. Description of a New Species of Bird of the Genus *Catharus*, from Ecuador. (Proc. U. S. Nat. Mus. 1887, p. 503.)

Nelson, E. W. Report upon Natural History Collections made in Alaska between the years 1877 and 1881. Edited by H. W. Henshaw, 4to. pp. 337. 21 plates. Washington: Government Printing Office. 1887 [=1888].

Newton, Sir Edward. Presidential Address before Norfolk and Norwich Naturalists' Society, with Appendix containing List of the Birds of the Mascarene Islands, including the Seychelles. (Trans. Norfolk and Norwich Nat. Soc., IV, pp. 537-554.)

Reichenow, Dr. A. Die Begrenzung Zoogeographischer Regionen vom ornithologischen Standpunkt. (Zool. Jahrb., III, Abth. f. Syst., pp. 671-704.)

Sharpe, R. B. (1) On two apparently undescribed Species of *Sturnus*. (Ibis, 1888, pp. 438-440.) (2) On two new species of Starlings. (Ibid., pp. 476, 477.) (3) Diagnoses of some new Species of Birds obtained on the Mountains of Kina Balu by Mr. John Whitehead. (Ibid., pp. 478, 479.) (4) Note on the Genus *Rectes*. (Ibid., pp. 435, 437.) (5) Further Descriptions of new Species of Birds discovered by Mr. John Whitehead on the Mountains of Kina Balu, Northern Borneo. (Ibid., pp. 383-396, pll. ix-xii.) (6) On a New Species of *Accipiter* from Liberia. (Notes from the Leyden Museum, X, pp. 199, 200.) (7) On a new Species of *Elainea* from the Island of Fernando Norohna. (P. Z. S., 1888, p. 107.) (8) Descriptions of some new Species of Birds from the Island of Guad. alcanar in the Solomon Archipelago, discovered by Mr. C. M. Woodford. (Ibid., pp. 182-185.) (9) Notes on Specimens in the Hume Collection of Birds. No. 6. On some Species of the Genus *Digena*. (Ibid., pp. 246-247.) (10) List of a Collection of Birds made by Mr. L. Wray in the

Main Range of Mountains of the Malay Peninsula, Perak. (Ibid., pp. 267-281, pl. xv.)

Sharpe, R. B., and P. Robert. Birds in Nature. 4to. 39 col. pll. Boston: Estes & Lauriat. 1888.

Shufeldt, R. W. Contributions to the Comparative Osteology of Arctic and Sub-arctic Water-birds. Pt. I. (Journ. Anat. & Phys. XXIII, pp. 1-39, pll. i-v.)

Stejneger, L. (1) Notes on European Marsh-Tits, with Description of a new Subspecies from Norway. (Proc. U. S. Nat. Mus. 1888, pp. 71-76.) (2) Further Contributions to the Hawaiian Avifauna. (Ibid., pp. 93-103.) (3) Notes on the European Crested Titmice. (Ibid., pp. 113, 114.)

Zeledon, J. C. Descripcion de una especie nueva de "Gallina de Monte." (Ann. de Mus. Nac. de Costa Rica, 1888.)

American Field, XXX, Nos. 10-23, 1888.

American Journ. Sci., XXXVI, Oct.-Dec., 1888.

American Naturalist, XXII, Aug.-Dec., 1888.

Audubon Magazine, II, Oct.-Dec., 1888.

Canadian Record of Science, III, No. 4, 1888.

Forest and Stream, XXXI, Nos. 7-20, 1888.

Hoosier Naturalist, III, No. 6, Nov., 1888.

Journal Cincinnati Soc. Nat. Hist., XI, Nos. 2, 3, 1888.

Naturalist, The, a Month. Journ. Nat. Hist. for North of England, Nos. 158-161, 1888.

Ornithologist and Oölogist, XIII, Nos. 9-11, Sept.-Nov., 1888.

Ornis, IV, Heft 4, Oct., 1888.

Ottawa Naturalist, II, Nos. 6, 7, 1888.

Proceedings Acad. Nat. Sci. Philadelphia, 1888, Pt. 2, Mch.-Sept.

Proceedings U. S. Nat. Mus., 1887, pp. 497-771; 1888, pp. 1-128.

Swiss Cross, IV, Oct.-Dec., 1888.

Zoologischer Anzeiger, Nos. 287-293, 1888.

Zoologist, XII, Oct.-Dec., 1888.

GENERAL NOTES.

The Present Status of Forster's Tern as a Bird of New England.—In an article on the Terns of the New England Coast published some ten years ago* I spoke of *Sterna forsteri* as a species which "though rare, is of perhaps too regular occurrence to be classed among the accidentals, for one or two specimens are reported nearly every season, usually during the month of September." Since the appearance of this article, however, I have heard of the capture of but a single additional specimen, a young bird in autumnal plumage taken Oct. 2, 1888, by Mr. J. C. Cahoon

* Bull. N. O. C. IV, 1879, p. 14.

at Monomoy Island, near Chatham, Massachusetts, and now in my coltion. It would seem, therefore, either that Forster's Tern has ceased to visit the New England coast at all regularly or frequently, or that its occurrence in small numbers during several successive seasons prior to 1879, was purely fortuitous. The former is perhaps the more probable hypothesis, for nearly all our water birds have decreased in numbers during the past decade, and none among them more considerably than the Terns—the chosen victims of the millinery collectors.—WILLIAM BREWSTER, *Cambridge, Mass.*

Notes on Brewster's and the Blue-footed Gannet. — Early in October, 1888, Mr. E. J. Reed of Guaymas, Mexico, did me the very great kindness of capturing alive, and presenting me with a specimen each of the abovenamed birds (*Sula brewsteri* and *S. gossi*). They were taken at San Pedro Martir Isle of the Gulf of California, and expressed to Fort Wingate, New Mexico, where they arrived on the 16th of the month, the Blue-footed one having died on the passage, while Brewster's was as lively as if he had just been taken.

In comparing them with Colonel Goss's admirable description of these two new species, published in 'The Auk' for July, 1888, I found them to correspond very closely. Points of the most interest were the dark brown irides in *S. brewsteri*, with their limiting circle of white, the strongly pectinated mid-anterior claws, and the beautiful shade of purplish ultra-marine blue of the feet of *S. gossi*.

After its fast of certainly four or five days I expected to see the surviving Gannet drink a quantity of water, and perhaps eat anything that was offered to it; but, no, upon being placed in a large bath tub of fresh water, it started to vigorously splash and preen itself, as a duck will do under similar circumstances, and then suddenly ceased without apparently drinking a drop, disgusted I imagine at its being *fresh*. I had to force it to eat a few ounces of venison, not having a fish at hand to give it; indeed, I myself have not seen a fresh fish for over four years. The bird was placed next out in the sun, where it seemed to enjoy itself, and arranged with its beak its wetted and rumpled plumage. If one attempted to handle it, however, it struck out vigorously with its sharp-pointed bill, and could inflict quite an ugly wound, as one of my hands will still testify. Next morning my Gannet was more cheerful than ever, but circumstances induced me to kill it with chloroform, and I removed the skins from both specimens and forwarded them to Mr. Robert Ridgway for identification. Upon dissection they proved to be females, and a casual examination of the viscera in each satisfied me that Macgillivray's account of this part of their anatomy, as given in Aububon, is a fairly accurate one for *Sula*, though I saw enough besides to satisfy me that a far more thorough description of the structure of these birds is demanded.—R. W. SHUFELDT, *Fort Wingate, New Mexico.*

Histrionicus histrionicus on Long Island, New York.—I wish to record the capture of a specimen of *Histrionicus histrionicus* taken on Long

Island, New York, Nov. 22, 1878. The bird was a male, not quite, but almost in mature plumage, and was shot in the bay south of Freeport, Long Island, and on account of its oddity brought to me. The specimen is now in the collection of the Long Island Historical Society.—GEO. B. BADGER, *Haywards, California.*

Chen cærulescens in Massachusetts.—On October 26, 1876, I bought of Mr. Tufts, taxidermist, of Lynn, Mass., a mounted Blue Goose, the skin being still fresh, which is now in my possession.

The specimen, a young female, with white on chin only, was shot "in or near Essex Creek, West Parish, Gloucester, Mass., Oct. 20, 1876."—WM. A. JEFFRIES, *Boston, Mass.*

Baird's Sandpiper in Central New York.—While collecting at Onondaga Lake, N. Y., August 27, 1888, I secured a Baird's Sandpiper (*Tringa bairdii*). This appears to be the tenth for New York State; of the others, six have been recorded from Long Island ('Forest and Stream', Vol. X, No. 13, p. 235, May 2, 1878; B. N. O. C., Vol. VII, p. 133, 1882; Auk, Vol. II, p. 273, 1885), one from Locust Grove, Lewis County, by Mr. Henshaw (Auk, Vol. II, p. 384, 1885), and two from Fair Haven, Cayuga County, by Frank R. Rathburn (O. & O., Vol. VII, p. 133, 1882). More stragglers—if such they are—of this bird may be expected from the lakes of western and central New York, during the fall, as numbers of shore-birds visit them at that season.—MORRIS M. GREEN, *Washington, D. C.*

The Northern Phalarope (*Phalaropus lobatus*) in the Franconia Mountains, New Hampshire.—About five years ago, in September, while fishing on Profile Lake, Franconia, N. H., I observed a bird sitting on the water, feeding on winged ants, of which thousands lay on the surface. The bird was fearless, allowed me to approach it in my canoe so closely that I could easily reach it with my landing net (handle not three feet long), and was not alarmed at several attempts I made to put the net gently over him. I observed him for nearly half an hour, constantly within a few feet of him, and then left him. I did not know the bird, and several friends, ornithologists, afterward expressed a wish that I had captured or killed him for examination.

On September 22, 1888, while fishing on Lonesome Lake (about two miles from Profile Lake, on Mt. Cannon, nearly 3000 feet above sea-level), I saw another specimen of the same bird swimming duck-like among the sedges on the edge of the lake. He was equally fearless, allowing me to approach within hand reach, without alarm and without ceasing his employment, which was feeding on the seeds of the sedges. There was no mistake, in either case, as to what the bird was eating—in one case ants, in the other seed. In the latter case I greatly enjoyed watching the rapid and graceful action of the bird as he picked off the seeds, frequently stretching up, almost standing on the water, and reaching to seeds on high sedges. After ten minutes I concluded with great

reluctance to kill him, which I did by striking him gently on the head with a short stick. Ornithologists who examined him pronounced him the Northern Phalarope. At their request I make this note of the facts. —W. C. PRIME, *New York City.*

Occurrence of the Western Sandpiper (*Ereunetes occidentalis*) in Numbers on the Coast of Massachusetts.—Among some Waders collected in 1888 on Monomoy Island, near Chatham, Massachusetts, I find four unmistakable specimens of *Ereunetes occidentalis.* Three of them, all females, were taken by Mr. J. C. Cahoon, one July 19, the other two Sept. 19. The fourth, a male, was shot Sept. 1 by Mr. Whiting. The July bird is an adult in richly colored and but little worn breeding plumage. The others are young in summer dress.

Mr. Cahoon tells me that he killed many specimens of the *E. occidentalis* at Monomoy during July, August, and September, 1888, but supposing at the time that they were merely large, long-billed examples of *E. pusillus*, he preserved only the three above mentioned. His impression is that they were nearly as numerous at times as *E. pusillus.* There is, I believe, but one previous record of the occurrence of *E. occidentalis* in Massachusetts, viz., that by Mr. Henshaw* of the capture of a specimen on "Long Island, Boston Harbor, Aug. 27, 1870."—WILLIAM BREWSTER, *Cambridge, Mass.*

Sandpipers at Sea—A Correction.—On looking at my note on 'Sandpipers at Sea' in 'The Auk,' Vol. III, I find at commencement of the first paragraph on page 132 "The *fastest* run up to 12 M. on May 8, was 582 miles." This should read "The *distance* run", etc. 582 miles a day for an old French steamer would be pretty good work.—WM. A. JEFFRIES, *Boston, Mass.*

Remarkable Flight of Killdeer (*Ægialitis vocifera*) near Portland, Maine.—On the afternoon of Wednesday, November 28, 1888, several flocks of Killdeer were seen by Captain Trundy, of the U. S. Life Saving Service, near his station, on the extreme point of Cape Elizabeth, Maine. Twenty birds, which were shot down without difficulty, were sent to Portland and offered for sale at one of the markets. On the following day, Captain Trundy tells me, hundreds of the Plover were to be seen along the shores of the Cape, and on Richmond's Island, a mile or two west of the station. They disappeared on November 30, leaving stragglers behind, however, the last of which was shot by one of the Life Saving crew on December 4, and kindly presented to me.

Such a flight of Killdeer in Maine—where the bird is well known to be rare—has probably not occurred within the memory of living sportsmen. It is doubtless to be attributed to the violent northerly storm that prevailed in eastern North America on November 25, 26 and 27.—NATHAN CLIFFORD BROWN, *Portland, Maine.*

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*Auk, Vol. II, No. 4, 1885, p. 384.

Note on Ægialitis meloda circumcincta.—In looking over the back numbers of 'The Auk' which have accumulated on my desk during my late long absence from America, I find a notice* of the occurrence of *Ægialitis meloda circumcincta* on the Atlantic coast, by Mr. J. A. Allen. Amongst other examples of this variety, Mr. Allen writes that he has examined "two skins of typical *circumcincta*" taken by myself in Scarborough, Maine.

It is proper for me to state that I had never made mention of these examples, for the reason that I doubted the validity of the so-called 'inland form.' The evidence of such Maine birds as have fallen into my hands is certainly against it. I cannot remember that I have ever seen more than three specimens, taken on the coast of Maine, in which the neck band was wholly interrupted in front; and while the band, when complete, is not always so broad as in the skins examined by Mr. Allen, it is often so. The two forms distinctly intergrade in Maine. According to Mr. Allen,† they come very near intergradation in New Jersey. One cannot help believing, from the numerous instances, published and unpublished, of the occurrence of *circumcincta* on the Atlantic coast, that the same thing may be true of other localities. All this, of course, is not enough to deprive the belted bird of its name; but it is perhaps enough to render its right to a separate name doubtful.—NATHAN CLIFFORD BROWN, *Portland, Maine.*

The Turkey Buzzard in Massachusetts.—Thursday morning, Sept. 9, 1888, a farmer in West Falmouth, Mass., shot in his barnyard a fine specimen of the Turkey Buzzard (*Cathartes aura*). I happened to to be in the town when the bird was shot, and secured it. It is a female in very good plumage. The bird was seen by several persons about the town before it was shot, and from them I learned that it came from the north. It had evidently not eaten much recently.—EDWARD C. MASON, *Arlington, Mass.*

Krider's Hawk (*Buteo borealis kriderii*) on the Coast of Georgia.—Mr. W. W. Worthington has just sent me a perfectly typical specimen of Krider's Hawk, which he took on Sapelo Island, Georgia, February 16, 1888. The bird is a young or, at least, immature male. If I am not mistaken, this subspecies has not been found before in any of the Atlantic States.—WILLIAM BREWSTER, *Cambridge, Mass.*

First description of the Egg of Glaucidium phalænoides, Ferruginous Pygmy Owl.—On May 2, 1888, my collector took an adult female and one egg of this Owl at Cañon del Caballeros, near Victoria, Tamaulipas, Mexico. The locality is high and at the base of the more precipitous mountains. The nest was in a hollow tree, and contained but a single fresh egg. The egg is white, shaped like that of a *Megascops*, measures

*Vol. III. p. 482.

†l. c.

1.05 × .90 inches, and is in my collection with the parent bird. It will be observed that in size it is very close to the egg of *M. whitneyi*.—GEO. B. SENNETT, *New York City*.

[**A New Generic Name for the Elf Owl.**]—*Micropallas*, Strigidarum genus novum = *Micrathene*. Coues, 1866, nec *Micrathena*, Sundevall, Arachn.—ELLIOTT COUES, *Washington, D. C.*

Sphyrapicus ruber Breeding in Coniferous Trees.—In the July number of 'The Auk' (Vol. V, No. 3, p. 234) I stated that I doubted very much that this species ever bred in coniferous trees of any kind. In a letter recently received from Mr. A. H. Anthony, a well-known western ornithologist, he informs me that *S. ruber* was a rather common species in Washington County, Oregon, during 1884 and 1885, and that he found a pair nesting in a big fir stub, fully fifty feet from the ground. He writes me that as he was unable to take the eggs he did not molest the birds, but that there could be no doubt of their identity, as he watched them from the first day's excavating till they began to incubate.—C. E. BENDIRE, *Washington, D. C.*

Occurrence of Traill's Flycatcher near Washington, D. C.—Three specimens of *Empidonax pusillus traillii* taken this spring, are probably the first ever obtained from this locality. Although this Flycatcher is mentioned in every list of the birds of the District of Columbia and vicinity as occurring here, there is no evidence that the authors had ever seen the bird or taken a specimen. One was taken by the writer on May 13, 1888, at Potomac Run, Alexandria County, Virginia, another by Mr. Ridgway at Laurel, Maryland, on May 18, and the third by myself on the 19th, in Virginia, opposite Georgetown, D. C. Several others were subsequently seen and identified.—WILLIAM PALMER, *Washington, D. C.*

Early Appearance of Empidonax minimus at Portland, Maine.—The spring of the year 1888 was a bad season for early arrivals at Portland, most of the earlier birds being very much delayed. Yet some did come early, and I think the most remarkable example was the Least Flycatcher (*Empidonax minimus*). Previously its earliest recorded arrival was May 5 (N. C. Brown, Proc. Port. Soc. Nat. Hist., 1882, p. 12), but on the morning of May 2, 1888, a chilly day with the thermometer only 36° Fahrenheit, and snow falling steadily, I saw one in a large orchard inside the city limits.—JOHN C. BROWN, *Portland, Maine.*

Second Occurrence of the Prairie Horned Lark in Eastern Massachusetts. — In recording* not long since the capture of three specimens of *Otocoris alpestris praticola* at Revere Beach, Massachusetts, I ventured

*Auk, Vol V, No. 1, Jan., 1888, pp. 111, 112.

to suggest that this form might prove to be a regular if rare migrant through the eastern portions of our State. Some added probability is given this surmise by the fact that I have just taken two more perfectly typical examples of *praticola* at Great Island near Hyannis, Mass., Dec. 15, 1888. Both are males, one an old, the other a young bird. They were in flocks of *O. alpestris* which very possibly contained still other specimens of *praticola*, but I had neither time nor inclination to settle this point definitely by shooting a large number of birds, the only possible way, for the two forms could not be distinguished when living. As it was I killed twenty-three *alpestris* to get the two *praticola*, but none of the former were wasted.— WILLIAM BREWSTER, *Cambridge, Mass.*

Molothrus ater in Massachusetts in December.—On Dec. 8, 1888, I shot two female Cowbirds in Belmont, Mass. For records of this bird in Massachusetts in January, see 'The Auk,' Vol. V, 1888, p. 207.—WALTER FAXON, *Museum of Comparative Zoölogy, Cambridge, Mass.*

The Cowbird (*Molothrus ater*) as a Fly-destroyer. — On the 20th of October my little son shot a male Cowbird, winging it slightly; the bird was exceedingly active and fought most vigorously when taken in the hand, pecking savagely, but the moment it was placed on the floor, or on a table, it quieted down, and would step promptly and fearlessly up to an extended hand, and if a fly were presented, pick it off and stand patiently to wait for more. It caught flies with unerring snaps of its beak, as they flew around its head, buzzed against the window panes, or rested on the floor or table top; it drank freely of water, and delighted in picking up fine grains of earth and sand between its meals of flies. My children began to feed it promiscuously, but it refused everything except flies. They took it from room to room, when it was turned loose, and at once began its incessant war upon flies, soon catching every one that was not roosting on the ceiling. Finally after six or seven days of this captivity the supply of live flies gave out, and the bird was taken into the summer kitchen where these insects were in the greatest abundance and where large numbers were dead, having been whipped by the servants and the children; the Cowbird ate very heartily of these dead flies, and the next morning was found dead in its cage, in which it had been regularly shut up and covered every night.

It became fearless, and was easily taken up in the hand, after it had been in the children's hands about a day; it would stand facing them on a table top, and take flies from their hands as rapidly as they could be passed over.—HENRY W. ELLIOTT, *Smithsonian Institution, Washington, D. C.*

Notes upon the Sudden Appearance in Numbers of the Evening Grosbeak at Fort Wingate, New Mexico.—For four years and more (1884–1888) I have made constant and careful observations during all seasons upon the birds that are to be found in the country about Fort Wingate, New

Mexico. Much of this time I have rambled over this region almost daily, collecting birds and mammals and making extended notes upon them. During the first three years the Evening Grosbeak (*Coccothraustes vespertina*) was not to be found in the vicinity during either the vernal or autumnal migrations, and I never so much as heard its note. My mind was about satisfied that the species was not a visitant to this part of the range of the Rocky Mountains, when the doubt was suddenly dissipated last month (October, 1888) while I was out collecting in the pine forests about two miles from the station. There I met with a little party of four individuals, all females, and in wretched plumage; three of these were secured. A little later and in a different locality, this time some two miles in the opposite direction from the Fort, I came upon a very handsome pair, and succeeded in taking the male. He was an old one in fine autumnal feather. I saw no more of them until yesterday (Nov. 10, 1888), at which time I was with my gun in the cedar woods quite close to my house. The day was clear and the temperature moderate, though heavy frosts had occurred on the two preceding days and nights. The woods were actually alive with Robins (*M. m. propinqua*), feeding upon the cedar berries, and I soon discovered that numbers of Evening Grosbeaks were with them. At first I met with these latter in small flocks, from five to ten in number, but as I came into more favorable localities, they appeared in straggling parties consisting of from thirty to a hundred individuals. They mingled with the Robins both in the trees and in the loose flocks that kept passing overhead, and frequently gave vent to their loud and shrill whistle. There was no trouble in approaching them, while feeding upon the berries, as they appeared to be quite unsuspicious and not easily alarmed. My collecting basket soon contained a fine assortment of these truly beautiful creatures, they being in rich autumnal dress, and only occasionally was one to be met with that had not quite completed this plumage. The females differed considerably in their coloring, while in some of the males I observed that the rich orange band of the forehead and superciliary line was carried around in diminishing breadth to fairly meet the stripe of the opposite side at the occiput and completely blend with it there. In the males, too, the plumage of the legs is black, with the feathers each narrowly bordered with yellowish green; this feature is not usually described by ornithologists. Only a few moments ago I made up some half dozen skins of these birds, and my two sons each made a pair more apiece, all carefully selected. I was not a little surprised to find my experiences both in this and in shooting the specimens to be at complete variance with those of Dr. Merrill, as mentioned by him in a recent issue of 'The Auk' (Oct. 1888, p. 357). Neither I nor my sons found any difficulty whatever in making capital skins of these specimens, and I am quite sure I did not lose more than a feather to a bird in those that I prepared, and the skin in none of them appeared to me to be unusually thin. Moreover, some of them were killed with No. 8 shot, and in falling bumped down through the pine trees without any apparent damage, and only with the loss of a feather or two. It is diffi-

cult for me to account for this difference in our observations, infinitely the more so when the statement comes from the pen of such an accurate describer as is Dr. Merrill.

This extraordinary flight of these Grosbeaks here, convinces me that either the bird is inclined to be at times very erratic in its migrations, or else it may have to do with the approaching season, perhaps indicating a coming winter of unusual severity.

An excellent series of skeletons rewarded my collecting, and as I predicted in my letter in the October 'Auk', the *secondary palatine processes* are absent, the entire skull much resembling that part of the skeleton in *Coccothraustes vulgaris*, as figured for us by Huxley.—R. W. SHUFELDT, *Fort Wingate, New Mexico.*

Loggerhead Shrike at Bridgeport, Connecticut. — The following are the records of the Loggerhead Shrike at Bridgeport, Conn.: late in August, 1880, one seen; late in August, 1885, two seen together; August 29, 1888, two seen together, one of which I shot. Mr. J. A. Allen pronounced this a *Lanius ludovicianus excubitorides* and a bird of the year. All these birds were seen at the sea beach. The gizzard of the one killed was filled with grasshoppers.—C. K. AVERILL, JR., *Bridgeport, Conn.*

First Occurrence of the Philadelphia Vireo near Washington, D. C.— This bird is certainly rare with us, having until this spring escaped notice though expected and looked for. While collecting on the evening of May 17, 1888, on the Virginia side of the Potomac near the new bridge, I took a specimen which was industriously feeding with Red-eyed Vireos in the willows on the marshy bottom lands. — WILLIAM PALMER, *Washington, D. C.*

Unusual Nesting Site of Dendroica virens.—There stands, a little aside from a public road on Cape Elizabeth, Maine, on the top of a small hillock, some distance from any woods, a small pagoda of two stories, which is almost nightly filled by noisy pleasure-seekers. About it a grape-vine grows luxuriantly, and here, scarcely ten feet from the ground and only six from the floor of the piazza, a pair of Black-throated Green Warblers built their nest in the spring of 1888. Placed on the main stem of the vine, and so surrounded by leaves and twigs as to be absolutely invisible from the outside, it was nevertheless in plain sight the moment one stepped inside the sheltering vine upon the piazza. When I found the nest on June 29 it contained two eggs and one young bird, and on July 1 the eggs had hatched.—JOHN C. BROWN, *Portland, Maine.*

A Rare Bird in Chester Co., South Carolina. — I had been waiting all the morning of Oct. 11, 1888, for the cessation of the heavy gale and driving rain that had begun during the previous night, for I was anxious to get out into the woods and see what effect the storm was having on the

returning migrants. By midday the wind had subsided and the rain had become a mere drizzle. Shortly after 1 P. M. I ventured out, directing my steps to the nearest woods. But few birds were found, and I continued my search until I came to an extended body of scrubby black-jacks, pines, and red cedars about a mile and a half from home. Here I discovered a small gathering of Tufted Titmice, Carolina Chickadees, Ruby-crowned Kinglets, and several species of Warblers. I drove the gathering about through the low growth, shooting the birds that were not instantly recognized, until I reached an edge bordering on an old-field where I noticed a small bird fly into a low cedar. It was promptly shot. A glance was sufficient to reveal the fact that it was wholly new to me. I saw that it was a Warbler and a *Dendroica*. I began to revolve in mind the distinctive characters of each member of the genus until I had eliminated all save one — the one I had suspected it to be, for I had in memory Mr. Maynard's illustration of the female Kirtland's Warbler ('The Birds of Eastern North America,' pl. xvii). I hastened home to my library, and found that I had worked it out truly and that I had indeed "the rarest of all the Warblers" inhabiting the United States.

This, if I have read the records aright, is the third instance of *Dendroica kirtlandi* having been taken in the Atlantic States, and the second of its capture in South Carolina.—LEVERETT M. LOOMIS, *Chester, S. C.*

A Peculiar Nest of Cinclus mexicanus.—In an exceedingly interesting collection of nests and eggs recently received from Mr. Denis Gale, of Gold Hill, Colorado, a gift to the National Museum at Washington, D. C., an interesting Water Ouzel's nest, deserves mention.

Usually the Ouzel's nest is a domed, oven-shaped structure, ten to twelve inches through at its base, and from seven to eight inches high.

The nest now before me, No. 23,685, Nat. Mus. Collection, taken in Boulder Co., Colorado, May 31, 1888, and containing three fresh eggs at the time, was placed against one of the stringers, and close up to, and under the plank platform of a bridge, which saved the birds the trouble of doming it, in fact there was no room to do so. A full view of the interior can be had. The front face of this nest is five and a half inches high, by eight and a half inches wide. The depth of the nest gradually diminishes so that the rear of it is barely two inches high by eight inches wide. A side view of the structure gives it almost a triangular appearance. Outwardly the nest is principally composed of decayed plant fibres and lichens (*Hypnum* sp.?) used in a wet condition, and considerable sandy clay is mixed in amongst the outer portions of the structure which is covered all around with this material excepting at the entrance. This is near the top of the nest, four inches from the base, in the centre of the structure, and is two and one-half inches wide and one and a half inches high. The inner lining of the nest is composed of pine needles and stalks of grasses, amongst which that of the timothy grass (*Phleum pratense*) is plainly distinguishable. The inner cavity of the nest is three and a quarter inches wide by two and one-half inches deep, circular, and compactly built.—CHAS. E. BENDIRE, *Washington, D. C.*

Troglodytes aëdon, House Wren, Breeding in a Sand Bank. — Of all the quaint places this familiar little busybody could choose in which to lay its eggs and rear its young, one might imagine a sand bank, the common home of Bank Swallows and Kingfishers, to be the most singular and unusual. The fact that a House Wren might be found thus breeding may not be surprising to all observing ornithologists, but it certainly must be to most of them. On August 1, 1888, while Dr. B. H. Warren, State Ornithologist of Pennsylvania, and I were driving up one of the ravines leading from the beautiful Bay at Erie, Pennsylvania, the Doctor's keen eye caught sight of a House Wren as it darted into a Kingfisher's hole in the almost perpendicular bank about ten feet from the roadway. By the aid of a fence rail and easy digging the young, already able to fly, were caught in the hand, and the nest secured. I had already been interested in observing a pair of Wrens that had taken possession of a Bluebird's nest in the hollow limb of an apple tree in the dooryard of my summer house, but the taking for its own domicile this home of our large Kingfisher cast completely into the shade all I had known of the bird's housekeeping achievements, in which tin pails, kettles, skulls, and the like had figured.—GEO. B. SENNETT, *New York City.*

Saxicola œnanthe in Louisiana. — I have in my collection a mounted specimen of *Saxicola œnanthe*, a male in winter plumage, or a young male, which was shot within the limits of the City on September 12, 1888. Several others were seen on the same day, but only this one was procured. The bird is entirely out of its range.—GUSTAVE KOHN, *New Orleans, La.*

Summer Birds at Bridgewater and Moultonboro', New Hampshire.—In connection with Mr. Faxon's list of birds observed at Holderness, New Hampshire (See Auk, Vol. V. p. 149), the following observations of my own made at Bridgewater and Moultonboro', N. H., may be of interest, as they seem to give quite different results. Bridgewater is about six miles to the southwest of Holderness, and Moultonboro' about twelve miles to the east-southeast.

Birds observed at Bridgewater, N. H., July 12—Sept. 4, 1883.

Ardea herodias.—One or two seen.
Ardea virescens.—Not common.
Actitis macularia.—Not common.
Bonasa umbellus.—Common.
Circus hudsonius.—Not common.
Haliæetus leucocephalus.—One seen.
Coccyzus erythrophthalmus.—Common.
Ceryle alcyon.—Not common.
Dryobates villosus.—Quite common.
Dryobates pubescens.—Quite common.
Sphyrapicus varius.—Seen several times.
Colaptes auratus.—Quite common.

Antrostomus vociferus.—Quite common.
Chordeiles virginianus.—Very common.
Chætura pelagica.—Common.
Trochilus colubris.—Not common.
Tyrannus tyrannus.—Common.
Sayornis phœbe.—Quite common.
Contopus virens.—Very common.
Empidonax minimus.—Quite common.
Cyanocitta cristata.—Not common.
Corvus americanus.—Quite common.
Dolichonyx oryzivorus.—Not common.
Agelaius phœniceus.—Not common.
Icterus galbula.—Quite common.
Carpodacus purpureus.—Common.
Spinus tristis.—Common.
Poocætes gramineus.—Common.
Spizella socialis.—Common.
Spizella pusilla.—Very common.
Junco hyemalis.—A few on high hills.
Melospiza fasciata.—Common.
Pipilo erythrophthalmus.—Several seen on hills.
Habia ludoviciana.—Not common.
Passerina cyanea.—Very common.
Piranga erythromelas.—Common.
Progne subis.—A few seen.
Petrochelidon lunifrons.—One colony seen.
Chelidon erythrogaster.—Common.
Ampelis cedrorum.—Common.
Vireo olivaceus.—Very common.
Vireo flavifrons.—Not common.
Vireo solitarius.—Common.
Mniotilta varia.—Quite common.
Helminthophila ruficapilla.—Common.
Compsothlypis americana.—Quite common.
Dendroica æstiva.—Not common.
Dendroica coronata.—A few young seen Aug. 16.
Dendroica maculosa.—One seen Sept. 1.
Dendroica pennsylvanica.—Not common.
Dendroica virens.—Very common.
Dendroica vigorsii.—One shot Aug. 21.
Seiurus aurocapillus.—Common.
Geothlypis trichas.—Quite common on side-hills.
Setophaga ruticilla.—Quite common.
Galeoscoptes carolinensis.—Common.
Harporhynchus rufus.—Common.
Sitta carolinensis.—Quite common.
Parus atricapillus.—Common.

Turdus fuscescens.—Quite common.
Turdus aonalaschkæ pallasii—Common.
Merula migratoria.—Common.
Sialia sialis.—Common.

Birds observed at Moultonboro', N. H., July 21—August 11, 1885.

Urinator imber.—Several seen; one young in down captured.
Ardea herodias.—Tracks and one feather.
Actitis macularia.—A few seen.
Coccyzus erythrophthalmus.—Common.
Dryobates pubescens.—Not common.
Colaptes auratus.—Quite common.
Antrostomus vociferus.—Not common.
Chordeiles virginianus.—Not common.
Chætura pelagica.—Very common.
Tyrannus tyrannus.—Quite common.
Myiarchus crinitus.—A few seen.
Sayornis phœbe.—Common.
Contopus virens.—Quite common.
Empidonax pusillus traillii.—A few seen.
Empidonax minimus.—Not common.
Cyanocitta cristata.—Quite common.
Corvus americanus.—Quite common.
Dolichonyx oryzivorus.—Quite common.
Agelaius phœniceus.—Not common.
Carpodacus purpureus.—Not common.
Spinus tristis.—Common.
Poocætes gramineus.—Very common.
Zonotrichia albicollis.—Two heard singing.
Spizella socialis.—Common.
Spizella pusilla.—Common.
Junco hyemalis.—Quite common on mountains.
Melospiza fasciata.—Common.
Melospiza georgiana.—Not common.
Pipilo erythrophthalmus.—Quite common.
Passerina cyanea.—Very abundant.
Piranga erythromelas.—One heard.
Progne subis.—Common.
Chelidon erythrogaster.—Very common.
Ampelis cedrorum.—Very common.
Vireo olivaceus.—Common.
Vireo solitarius.—Not common.
Dendroica coronata.—A few on Ossipee Mt.
Dendroica pennsylvanica.—One seen.
Dendroica virens.—Not common.
Seiurus aurocapillus.—Quite common.
Geothlypis trichas.—Quite common.

Setophaga ruticilla.—Quite common.
Galeoscoptes carolinensis.—Quite common.
Harporhyncus rufus.—One seen.
Sitta carolinensis.—Quite common.
Parus atricapillus.—Common.
Regulus satrapa.—A few seen on Ossipee Mt.
Regulus calendula.—A few seen.
Turdus aonalaschkæ pallasii.—Quite common.
Merula migratoria.—Common.
Sialia sialis.—Common.

One each of *Haliæetus leucocephalus* and *Vireo gilvus* was observed at Centre Harbor in passing through. — FRANCIS H. ALLEN, *West Roxbury, Mass.*

CORRESPONDENCE.

[*Correspondents are requested to write briefly and to the point. No attention will be paid to anonymous communications.*]

The proper Name for the Genus Melanipitta of Schlegel.

EDITORS OF THE AUK:—

Dear Sirs: In the 14th volume of the "Catalogue of the Birds in the British Museum," p. 449, published in 1888, Dr. P. L. Sclater has proposed to substitute *Coracopitta* for *Melanipitta* of Schlegel (type *Pitta lugubris* Rosenb.), the latter name being preoccupied. I would call attention, however, to the fact that as early as 1885 I replaced *Melanipitta* by *Mellopitta* for the same reason, my name consequently having the priority over that of Dr. Sclater. The change was made in the 'Standard Natural History,' IV, Birds, p. 466.

Yours very truly,

LEONHARD STEJNEGER.

Washington, D. C., Dec., 1888.

NOTES AND NEWS.

MR. HENRY STEVENSON, of Norwich, England, a Corresponding Member of the A. O. U., died August 18, 1888. In 1864 he was elected a member of the British Ornithologists' Union, and was one of the founders, and for many years President of the Norfolk and Norwich Naturalists' Society, to whose 'Transactions' he was a frequent contributor, as also to the pages of the 'Zoölogist.' As an ornithologist he is perhaps best known as the author of a work entitled 'The Birds of Norfolk,' Vol. I of which appeared in 1866, and Vol. II in 1870, the work remaining unfinished at the time of his death. "To those who en-

joyed his friendship, Mr. Stevenson was a delightful companion; his powers of observation seemed almost intuitive, while his genial nature endeared him to all."

COUNT AUGUST FRIEDRICH MARSCHALL, a Corresponding Member of the American Ornithologists' Union, died October 11, 1887, in his eighty-third year. During his long scientific career he was particularly interested in geology, but zoölogy is also indebted to him for many valuable contributions, one of the most important of which is his 'Nomenclator Zoologicus' (Vienna, 1873). As an original ornithological author he was not prolific, most of his contributions to ornithology consisting of excerpts from other authors relating to birds belonging to the Austro-Hungarian fauna. With August von Pelzeln he was joint author of the 'Ornis Vindobonensis' (Vienna, 1882).

NEWS from Central Asia travels slowly, and beyond the mere notice that our distinguished Corresponding Member, the celebrated Russian traveller, General Prjevalsky, is dead, but little is as yet known as to the particulars of the sad event. We gather the following notes chiefly from a recent account by his friend Mr. Venjukoff.

Nicolas Michaïlovitch Prjevalsky (also often written Przewalski) died in Karakol on Nov. 1 (Oct. 20), 1888, while engaged in the preparations for his departure to Thibet, in the full vigor of his manhood, being only fifty years of age. While still a young man he manifested great interest in travel and exploration, and shortly after leaving the Military Academy he was entrusted with the exploration of the valley of the Ussuri in eastern Siberia (1867-1868). Since then he has undertaken four great expeditions to Central Asia in which he gained a world-wide fame as one of the most intrepid, indomitable, and successful travellers who ever attempted to penetrate to the 'back-bone' of the Eurasian continent (1870-1873, China; 1876-1877, the Central Asian desert region, discovering the position of Lake Lob-nor; 1879-1880, exploring Kuku-nor and northeastern Thibet; 1883-1885, studying the orography of the Kuenlun, from the sources of the Yellow River to Khotan). But unlike many other travellers, whose only aim is to 'discover' new countries, he also studied their natural history, and if we consider the enormous difficulties of transportation in those regions we can but admire his truly Russian pluck in bringing back to St. Petersburg 30,000 specimens of natural history objects, of which 5,000 specimens were birds, representing 430 species, besides 400 eggs. The short intervals between his great expeditions did not leave him time to work up all of this enormous material, yet he found leisure to publish several important ornithological papers, chief among which are his 'Materials for the Avifauna of Mongolia and the Tangatan Country' (published in 1876, and translated in Rowley's 'Ornithological Miscellany,' Vol. II), and a paper 'On new species of Central-Asian Birds' (Ibis, 1887, pp. 401-417), for, as Prjevalsky himself observes, ornithology was one of the chief objects of his special investigations. It is the more to be regretted that he should not have lived to undertake the

last-planned expedition to the capital of Thibet. As the Russian authorities are determined not to abandon the expedition, it is to be hoped that it will be carried out in the spirit of its originator. We notice with great satisfaction that the St. Petersburg Academy of Sciences has begun a work which will be a grand monument to the lamented explorer, the first part of a great work, in Russian and German, entitled, 'Wissenschaftliche Resultate der von Przewalski nach Central Asien unternommenen Reisen', having just appeared, containing a portion of the mammals (*Rodentia*).

THURE KUMLIEN, of Milwaukee, Wisc., an Associate Member of the A. O. U., and one of the older ornithologists—a valued correspondent of the late Professor Baird and Dr. Brewer—died recently at his home near Milwaukee. A fuller notice of his life and ornithological work is necessarily deferred, the required data having unexpectedly failed to come to hand.

WILLIAM L. BREESE, recently elected an Associate Member of the A. O. U., died at his home in Islip, Long Island, Dec. 7, 1888, in his thirty-seventh year. Mr. Breese was a well-known Wall-street broker, of the firm of Breese and Smith, and a son of Commodore Breese. Although little known as an ornithologist, he having published but little, the study of birds was one of his pastimes, and he had brought together quite a collection of the birds of Long Island. He was prominent in social, yachting, and athletic circles, and highly esteemed.

AT THE meeting of the American Ornithologists' Union recently held in Washington the matter of revising the proposed additions to the A. O. U. Check-List of North American birds, together with sundry suggested changes of nomenclature made since the publication of the Check-List, was referred to the Committee on Publications, with authority to publish the results of their work at the earliest practicable date, as a 'Supplement, to the A. O. U. Code and Check-List, and uniform with it as regards matter and typography. The Committee held a six days' session, ruling upon upwards of one hundred distinct questions. The status of the newly described species and subspecies, and the claims to admission of a number of extra-limital species were duly considered, as also a number of proposed changes in generic, subgeneric, and specific names. The preparation of the manuscript was provided for, as also the early publication of the report, in the hope of issuing it early in the year 1889.

The Union also voted that hereafter it shall be the duty of the Committee on Publications to act in a similar manner at each meeting of the A. O. U. on the proposed additions and changes of nomenclature made during the preceding year, and that it shall make provision to have laid before it the material (specimens and other evidence) by consideration of which the merits of each case may be respectively determined.

THE COUNCIL of the A. O. U. decided at its late meeting in Washingtou to issue an abridged edition of the Check-List, consisting of the scientific and common names, the serial numbering, and the 'concordance,' omitting

the bibliographical references and the habitats; the abridged edition, however, to include the additions and changes of the 'Supplement,' interpolated in their proper places. It will be printed on fine paper, and on one side of the page only, in order that it may be conveniently used for labelling purposes when desired, or the blank pages, when the list is used merely for a check-list, may be utilized for additions or other notes. This abridged list is already in the hands of the printer, and its publication may be looked for during January, 1889.

In order to add interest to the next meeting of the A. O. U., to be held in New York City next November, and also to advance our knowledge of certain obscure groups of birds, the Union decided to instruct the Committee of Arrangements for that meeting to make this a special feature of the meeting. The Committee decided to select the genus *Otocoris* (the Horned Larks), the Red Crossbills (*Loxia curvirostra* group), and the Thrushes known as *Turdus aliciæ* and *Turdus aliciæ bicknelli*, as the groups to be considered at the New York meeting. Mr. Robert Ridgway will have the matter especially in charge, to whom, as the time for the meeting approaches, it is hoped abundant material may be forwarded. Probably at the close of the meeting an informal sort of indoor 'field-day' will be arranged for the examination and comparison of the material thus brought together, in which examination all the members present can participate. It is hoped members will freely loan such material as they may have, bearing upon these groups, that light may thus be thrown upon the status and relationship of some of these obscure forms.

The desirability of adopting some uniform method of measuring birds having been brought to the attention of the Council of the A. O. U., by a letter on the subject addressed to it by Col. N. S. Goss, the Council appointed a Committee, consisting of Dr. Coues, Mr. Ridgway, Mr. Cory, Dr. Merriam, and Dr. Stejneger, to prepare a report on the subject to be presented at the next meeting. The Committee at its first session discussed the matter at some length, deciding some general matters, and referring special points to a subcommittee, consisting of Mr. Ridgway and Drs. Merriam and Stejneger, with instructions to prepare directions, illustrated with diagrams, for taking measurements of the bill and tail, in reference to which it is found that the systems employed by different authors widely vary. It is thus evident that a uniform method is highly desirable, and it is hoped the Committee will be able to formulate one which can be commended for general adoption.

The Committee of the A. O. U. appointed at the Boston meeting to incorporate the Union under the laws of the State of New York (see Auk, Vol. V. p. 97), found that incorporation under the laws of this State would render it necessary to hold the annual meetings of the Union always in the State of New York. This being contrary to the desire of the Union, the Committee advised incorporation under the laws of the District of Columbia, where it would be subject to no such restriction. In accordance with this suggestion the necessary steps to incorporate in Washing-

ton were taken during the late session of the Union in that city, and a certificate of incorporation was duly received and filed, the Union at once entering upon its career as a corporate body.

AT A MEETING of the Nuttall Ornithological Club on December 3, 1888, the following officers were elected for the ensuing year: President, William Brewster; Vice-President, William A. Jeffries; Secretary, Arthur P. Chadbourne; Corresponding Secretary, H. A. Purdie; Treasurer, C. F. Batchelder; Editor, Montague Chamberlain.

The readers of 'The Auk' will be gratified to know that the Nuttall Club, to whose fostering care this journal long owed its existence, continues with advancing years to gain in strength and activity. The attendance at the meetings has been much fuller and more regular of late years, although a large proportion of the members live at some little distance from Cambridge. The following are Resident Members of the Club: Edward A. Bangs, Outram Bangs, C. F. Batchelder, A. C. Bent, Frank Bolles, William Brewster, William S. Bryant, Arthur P. Chadbourne, Montague Chamberlain, Charles B. Cory, Walter Faxon, N.A. Francis, Joseph L. Goodale, J. Amory Jeffries, William A. Jeffries, Frederic H. Kennard, Charles R. Lamb, Edward C. Mason, Henry A. Purdie, Henry M. Spelman.

THE SECOND CONGRESS of the International Ornithological Committee will be held at Buda-Pest in the spring of 1889. The President of the Committee, Dr. Rudolf Blasius, and the Secretary, Dr. Gustav von Hayek, have issued a circular note to the members of the Committee, setting forth the objects of the Congress and suggesting subjects for consideration. In addition to the report on the work of the Committee during the last five years, which will be submitted, it is proposed to bring forward the following questions for action: (1) The establishing of an international classification and nomenclature of birds for general adoption. This involves an agreement in respect to a system of classification, and the principles on which nomenclature shall be based. The scheme further includes the preparation of a new 'Hand-list of Genera and Species', that of the late Dr. G. R. Gray, completed in 1871, having become in a measure obsolete through the lapse of time and the progress of the science. It is proposed that the labor of its preparation be divided among numerous specialists, who will act as collaborators, the publication of the work to be superintended by the Committee. (2) To secure additional observers, in districts not as yet properly covered to aid in determining the principal lines of migration. (3) Recommendations and suggestions respecting legislation for the better protection of birds, particularly during the spring migration and the breeding season. (4) The determination of the status of the different groups of birds as regards their economic relations to agriculture and forestry. Besides the above the Committee recommend the adoption of the metric system of measurement in all works relating to ornithology; and also to use scientific names of birds in all scientific publications, in addition to the vernacular names, in case the latter are used.

The members of the Committee are requested to send in their answers to these proposals, and also to submit others for discussion, to either the President or Secretary not later than the end of February of this year. The course of the official representatives of the Committee in bringing forward these important questions for consideration at the next International Congress is certainly commendable, and likely to yield important results.

THE question of the adoption of the metric system in ornithology, mentioned above, was discussed by the Council of the A. O. U. at the meeting recently held in Washington, and the matter of its adoption in 'The Auk,' was referred to the Committee on Publications. It was here again discussed at length, but the motion to adopt was finally lost, much to the surprise of some of the members advocating it. It would seem, however, that a reform of such evident desirability, must sooner or later meet with general favor.

IN the April number of 'The Auk' (Vol. V, p. 224) reference was made to various ornithological expeditions sent by Messrs. Godman, Brewster, and Sennett to different parts of Mexico. The collectors there mentioned have nearly all returned, and have had in the main excellent success Mr. M. A. Frazar has just reached the United States after an absence of two years, spent, in the interest of Mr. Brewster, in Lower California and Northwestern Mexico, his explorations extending eastward as far as Chihuahua. The amount of ornithological material gathered by him during this period, it may be safely said, greatly exceeds that collected by any other single pair of hands during an equal length of time, and must afford the basis for a very important contribution to our knowledge of these portions of Mexico.

Further southward Mr. and Mrs. H. H. Smith have been collecting for Mr. Godman, in the States of Guerrero and Tobasco, part of their time only, however, being devoted to birds. But several thousand skins of birds are included in their rich harvest, many of them collected in the higher mountainous parts of the State of Guerrero. Mr. Godman has also had Mr. William Lloyd at work in the State of Chihuahua, and Mr. W. B. Richardson in the States of San Luis Potosi and Tamaulipas.

Messrs. Priour and Grover have also sent large collections to Mr. Sennett from the States of Tamaulipas and Nuevo Leon. Thus large portions of the Republic of Mexico have been visited during the past year by able and well-trained collectors, the results of whose labors must yield many novelties and much detailed information respecting Mexican ornithology.

MR. Cory, it may be added, is still continuing his work in the West Indies. One of his collectors, Mr. E. B. Gallinger, however, unfortunately fell a victim to yellow fever before fairly entering upon his explorations. Mr. and Mrs. Smith, we understand, are to sail soon for the island of St. Vincent, being under an engagement to thoroughly explore first the fauna of this island, and later that of other islands, for Mr. Godman.

OFFICERS AND STANDING COMMITTEES OF THE AMERICAN ORNITHOLOGISTS' UNION. 1888–89.

	Expiration of Term.
ALLEN, J. A., *President*	November, 1889.
COUES, ELLIOTT, RIDGWAY, ROBERT, *Vice Presidents*	" 1889.
MERRIAM, C. HART, *Secretary*	" 1889.
DUTCHER, WILLIAM, *Treasurer*	" 1889.

ADDITIONAL MEMBERS OF THE COUNCIL.

BREWSTER, WILLIAM	November, 1889.
CORY, CHARLES B	" 1889.
ELLIOT, DANIEL G	" 1889.
HENSHAW, HENRY W	" 1889.
LAWRENCE, GEORGE N	" 1889.
McILWRAITH, THOMAS	" 1889.
STEJNEGER, LEONHARD	" 1889.

EDITORIAL STAFF OF 'THE AUK.'

ALLEN, J. A., *Editor*	November, 1889.
BATCHELDER, C. F., *Associate Editor*	" 1889.

COMMITTEES.

Committee on Publications.

ALLEN, J. A., *Chairman.* COUES, ELLIOTT.
RIDGWAY, ROBERT, *Secretary.* MERRIAM, C. HART.
BREWSTER, WILLIAM.

Committee of Arrangements for the Meeting of 1889.

ALLEN, J. A., *Chairman.* ELLIOT, D. G.
DUTCHER, WILLIAM. MERRIAM, C. HART.
RIDGWAY, ROBERT.

MEMBERS OF THE AMERICAN ORNITHOLOGISTS' UNION. DECEMBER, 1888.

ACTIVE MEMBERS.

[Omission of date indicates a Founder.]

Date of Election.

ALDRICH, Hon. CHARLES, Webster City, Iowa ..... —
ALLEN, J. A., Am. Mus. Nat. Hist., 77th St. and 8th Ave., New York City ..... —
BAILEY, H. B., 51 South St., New York City ..... —
* BAIRD, Prof. SPENCER F., Washington, D. C. ..... —
BARROWS, Prof. W. B., Dept. of Agriculture, Washington, D. C. 1883
BATCHELDER, CHARLES F., Cambridge, Mass. ..... —
BELDING, L., Stockton, Cal. 1883
BENDIRE, Capt. CHARLES E., U. S. A., Smiths. Inst., Washington. D. C. ..... —
BICKNELL, EUGENE P., P. O. Box 2958, New York City ..... —
†BREWSTER, WILLIAM, Cambridge, Mass. ..... —
BROWN, NATHAN C., Portland, Me. ..... —
BRYANT, WALTER E., San Francisco, Cal. 1888
CHAMBERLAIN, MONTAGUE, 5 Somerset St., Boston, Mass ..... —
CHAPMAN, FRANK M., Am. Mus. Nat. Hist., 77th St. and 8th Ave., New York City 1888
COOKE, Prof. W. W., Burlington, Vt. 1884
† CORY, CHARLES B., 8 Arlington St., Boston, Mass ..... —
* †COUES, Dr. ELLIOTT, Smiths. Inst., Washington, D.C. ..... —
DEANE, RUTHVEN, 2 Wabash Ave., Chicago, Ill. 1883
DUTCHER, WILLIAM, 51 Liberty St., New York City 1886
DWIGHT, JONATHAN, Jr., 2 East 34th St., New York City 1886
ELLIOT, DANIEL G., Am. Mus. Nat. Hist., 77th St. and 8th Ave., New York City ..... —
FISHER, Dr. ALBERT K., Dept. of Agriculture, Washington, D. C ... —
FORBES, Prof. S. A., Champaign, Ill. 1883
FOSTER, LYMAN S., 35 Pine St., New York City 1888
GILL, Prof. THEODORE N., Smiths. Inst., Washington, D. C. 1883
†GOSS, Col. N. S., Topeka, Kans. 1883
GRINNELL, Dr. GEORGE B., 'Forest and Stream' Office, New York City, 1883
HENSHAW, HENRY W., Bureau of Ethnology, Washington, D. C 1883
*HOLDER, Dr. J. B., Am. Mus. Nat. Hist., New York City. ..... —
JEFFRIES, Dr. J. AMORY, 91 Newbury St., Boston, Mass 1883
LANGDON, Dr. F. W., 65 West 7th St., Cincinnati, O. 1887
LAWRENCE, GEORGE N., 45 East 21st St., New York City. 1883
LAWRENCE, NEWBOLD T., 51 Liberty St., New York City 1883

*Deceased. †Life Member.

McILRAITH, THOMAS, Hamilton, Ontario, Can..... —
MEARNS, Dr. EDGAR A., U. S. A., Fort Snelling, Minn..... —
MERRIAM, Dr. C. HART, Dept. of Agriculture, Washington, D. C... —
† MERRILL, Dr. JAMES C., U. S. A., Frankford Arsenal, Philadelphia, Pa.....1883
NEHRLING, H., 815 North Ave., Milwaukee, Wis.....1883
NELSON, E. W., Springerville, Arizona.....1883
PRENTISS, Dr. D. W., 1101 14th St., N. W., Washington, D. C..... —
PURDIE, H. A., West Newton, Mass..... —
RIDGWAY, ROBERT, Smiths. Inst., Washington, D. C..... —
ROBERTS, Dr. THOMAS S., 27 N. 8th St., Minneapolis, Minn.....1883
†SAGE, JOHN H., Portland, Conn.....1883
SAUNDERS, WM. E., 188 Dundas St., London, Ontario, Can.....1883
SCOTT, W. E. D., Tarpon Springs, Fla.....1886
SENNETT, GEORGE B., Am. Mus. Nat. Hist., 77th St. and 8th Ave., New York City.....1883
SHUFELDT, Dr. ROBERT W., U. S. A., Fort Wingate, N. M..... —
STEJNEGER, Dr. LEONHARD, Smiths. Inst., Washington, D. C.....1884
†TRUMBULL, GURDON, 970 Asylum St., Hartford, Conn.....1888
* WHEATON, Dr. J. M., Columbus, Ohio..... —
WIDMANN, M. OTTO, 3826 So. Broadway, St. Louis, Mo.....1884

HONORARY MEMBERS.

Date of Election.

BOCAGE, Prof. J. V. BARBOZA DU, Royal Museum, Lisbon, Portugal.1883
BURMEISTER, Dr. HERMANN VON, Director National Museum, Buenos Ayres.....1884
CABANIS, Prof. Dr. JEAN, Alte Jacobstrasse, 103a, Berlin, Germany..1883
DRESSER, HENRY E., Topclyffe Grange, Farnborough, Beckenham, Kent, England.....1883
FINSCH, Dr. OTTO, Delminhorst, near Bremen, Germany.....1883
GATKE, HEINRICH, Heligoland, via Bremen, Germany.....1884
GIGLIOLI, Dr. HENRY HILLYER, Royal Superior Institute, Florence, Italy.....1883
GUNDLACH, Dr. JUAN, Ingenio Fermina, Bemba, Cuba.....1883
GURNEY, JOHN HENRY, Northrepps Hall, Norwich, England.....1883
HARTLAUB, Dr. GUSTAV, Bremen, Germany.....1883
HUME, ALLAN OCTAVIAN, Simla, India.....1883
HUXLEY, Prof. THOMAS H., 4 Marlborough Place, Abbey Road, London, N. W.....1883
KRAUSS, Dr. FERDINAND, Stuttgart, Germany.....1883
MILNE-EDWARDS, Prof. ALPHONSE, Rue Cuvier, 57, Paris.....1883
NEWTON, Prof. ALFRED, University of Cambridge, England.....1883
PARKER, Prof. WILLIAM KITCHEN, Crowland, Trinity Road, Upper Woting, London, S. W.....1883

* Deceased. † Life Member.

PELZELN, Dr. AUGUST VON, 13, Royal Zoöl. Museum, Vienna.....1883
SALVADORI, Prof. Count TOMMASO, Royal Zoöl. Museum, Turin, Italy.....1883
SALVIN, OSBERT, Hawksfold, Fernhurst, Haslemere, England.....1883
SAUNDERS, HOWARD, 7 Radnor Place, Hyde Park, London, W.....1884
*SCHLEGEL, Prof. HERMANN, Leyden, Holland.....1883
SCLATER, Dr. PHILIP LUTLEY, 3 Hanover Sq., London, W.....1883
SEEBOHM, HENRY, 6 Tenterden St., Hanover St., London, W.....1884
SHARPE, RICHARD BOWDLER, British Museum, South Kensington, London, S. W.....1883
TACZANOWSKI, Dr. W., University, Warsaw, Russia.....1884
WALLACE, Prof. ALFRED RUSSEL, Nutwood Cottage, Frith Hill, Godalming, England.....1883

CORRESPONDING MEMBERS.

Date of Election

ALTUM, Dr. C. A., Eberswalde, Germany.....1884
ANDERSON, Dr. JOHN, India Museum, Calcutta.....1884
BALDAMUS, Dr. EDUARD, Moritzwinger, No. 7, Halle, Germany.....1884
BERLEPSCH, Count HANS VON, Münden, Germany.....1883
BLAKISTON, Capt. THOMAS W., London, Ohio.....1883
BLANFORD, W. T., Arts Club, London.....1884
BLASIUS, Dr. RUDOLPH, Brunswick, Germany.....1884
BLASIUS, Dr. WILHELM, Brunswick, Germany.....1884
*BOGDANOW, Prof. Dr. MODEST N., University of Moscow, Moscow, 1884
BROOKS, W. E., Milton, Ontario, Canada.....1886
BULLER, Sir WALTER LAWRY, 8 Victoria Chambers, Victoria St., Westminster, London, S. W.....1883
BUREAU, Dr. LOUIS, Ecole de Médicine, Nantes, France.....1884
BUTLER, Lieut.-Col. E. A., Herringfleet Hall, Lowestoft, England..1884
BÜTTIKOFER, Dr. J., Leyden, Holland.....1886
COLLETT, Prof. ROBERT, Zoölogical Museum, Christiania, Norway.1883
COOPER, Dr. J. G., Haywards, California.....1884
CORDEAUX, JOHN, Great Cotes, Ulceby, Lincolnshire, England.....1884
DALGLEISH, JOHN J., 8 Athole Crescent, Edinburgh, Scotland.....1883
DAVID, L'Abbé ARMAND, Rue de Sèvres, 95, Paris.....1883
DUBOIS, Dr. ALPHONSE, Museum Nat. History, Brussels.....1884
DUGÈS, Prof. ALFREDO, Colegio del Estado, Guanajuato, Mexico....1884
ECHT, ADOLF BACHOFEN VON, Nussdorf, near Vienna.....1884
FATIO, Dr. VICTOR, Geneva, Switzerland.....1884
FIELDEN, Lieut.-Col. H. W., West House, Wells, Norfolk, England.....1884
FERRARI-PEREZ, Prof. FERNANDO, Naturalist Mexican Geol. Expl. Commission, Pueblo, Mexico.....1885
FREKE, PERCY EVANS, Rosemount, Dundrum, County Dublin, Ireland.....1883

*Deceased.

GADOW, Dr. HANS, The New Museums, Cambridge, England.....1884
GIRTANNER, Dr. A., St. Galle, Switzerland.....1884
GODMAN, F. DU CANE, 10 Chandos Street, Cavendish Sq., London..1883
GODWIN-AUSTEN, Lieut.-Col. H. H., Shalford House, Guilford, England.....1884
GRANDIDIER, ALFRED, 6 Rond-Point des Champs Elysées, Paris....1883
GURNEY, JOHN HENRY, Jr., Keswick Hall, Norwich, England.....1883
*HAAST, Dr. JULIUS VON, Christ-church, New Zealand.....1884
HARGITT, EDWARD, Broadwater Lodge, Broadwater, Worthing, Sussex, England.....1884
HARTING, JAMES EDWARD, Linnæan Society, Burlington House, Piccadilly, London.....1883
HARVIE-BROWN, JOHN A., Dunipace House, Larbert, Stirlingshire, Scotland.....1883
HAYEK, Dr. GUSTAV VON, Vienna.....1884
HOLUB, Dr. EMIL, Vienna.....1884
HOMEYER, Dr. E. F. VON, Stolp, Germany.....1884
KRUKENBERG, Dr. E. F. W., Würzburg, Germany.....1884
KRÜPER, Dr. THEOBALD J., University Museum, Athens, Greece....1884
LAYARD, E. L., H. B. M. Consul, Noumea, New Caledonia.....1884
MACFARLANE, ROBERT, Winnipeg, Manitoba.....1886
MADARÁSZ, Dr. JULIUS VON, National Museum, Budapest, Hungary. 1884
MALMGREN, Dr. A. J., University, Helsingfors, Finland. 1884
*MARSCHALL, Graf A. F., Wallzeil, 33, Vienna.....1884
MENZBIER, Dr. M., Moscow, Russia.....1884
MEYER, Dr. A. B., Königl. Zoöl. Museum, Dresden 1884
MIDDENDORF, Dr. A. VON, Dorpat, Russia 1884
MOJSISOVICS, Dr. A. VON, Gratz, Austria.....1884
NAMIYE, M., Tokio, Japan.....1886
NICHOLSON, FRANK, 62 Fountain St., Manchester, England 1884
OATES, E. W., 6 Tenterden St., Hanover Sq., London.....1884
OUSTALET, Dr. ÉMILE, Jardin des Plantes, 55 Rue de Buffon, Paris..1883
PALMÉN, Prof. J. A., Helsingfors, Finland.....1883
PHILIPPI, Dr. R. A., Santiago, Chili.....1884
* PRJEVALSKI, General N. M., Acad. of Science, St. Petersburg, Russia.....1884
* PRYER, HARRY, Yokohama, Japan.....1883
RADDE, Dr. GUSTAV FERDINAND, Tiflis, Russia.....1884
RAMSEY, E. P., Sydney, New South Wales, Australia.....1884
REICHENOW, Dr. ANTON, Königl. Mus. für Naturkunde, 43 Invaliden str., Berlin.....1884
SCHRENCK, Dr. LEOPOLD VON, St. Petersburg, Russia.....1884
SELYS-LONGSCHAMPS, Baron EDMOND DE, Liége, Belgium.....1884
*SEVERTZOW, Dr. N., Moscow, Russia.....1884
SHALOW, Dr. HERMAN, 31 Paul Str., N. W., Berlin, Germany.....1884
SHELLEY, Capt. G. E., 6 Tenterden St., Hanover Sq., London 1884
* STEVENSON, HENRY, Unthank's Road, Norwich, England.....1884

*Deceased.

THEEL, Dr. HJALMAR, University of Upsala, Upsala, Sweden 1884
TRISTRAM, Rev. Canon H. B., The College, Durham, England.....1884
TSCHUSI ZU SCHMIDHOFFEN, Count VICTOR RITTER VON, near Hallein, Salzburg, Austro-Hungary.....1884
WHARTON, HENRY T., 39 St. George's Road, Kilburn, London, N. W. 1884
ZELEDON, Sr. Don José C., San José, Costa Rica 1884

ASSOCIATE MEMBERS.

Date of Election.

ADNEY, E. T., Am. Mus. Nat. Hist., 77th St. and 8th Ave., New York City.....1885
ADT, ALBERT A., Box 101, Waterbury, Conn.....1888
ALLEN, Dr. CHARLES S., 21 E. 28th St., New York City.....1888
ALLEN, FRANCIS H., West Roxbury, Mass.....1888
AMERY, CHARLES F., Forest and Stream Pub. Co., 318 Broadway, New York City.....1886
ANTHONY, A. W., San Diego, Cal.....1885
ARCHER, W. C., 252 7th St., Jersey City, N. J.....1888
*ATKINS, Dr. H. A., Locke, Ingham Co., Mich.....1883
ATKINS, J. W., Key West, Florida.....1887
AVERILL, C. K., Jr., Bridgeport, Conn.....1885
AVERY, Dr. WM. C., Greensboro, Ala.....1887
BAGG, EGBERT, 187 Genesee St., Utica, N. Y.....1883
BAILEY, VERNON, Elk River, Minn 1887
BAILY, WM. L., 212 So. 3d St., Philadelphia, Pa.....1886
BANGS, E. A., 31 Pemberton Sq., Boston, Mass.....1884
BANGS, OUTRAM, 31 Pemberton Sq., Boston, Mass.....1884
BANKS, J. W., Portland, N. B.....1887
BARNARD, JOB, 500 5th St., N. W., Washington, D. C.....1886
BEAL, F. E. L., Lunenburg, Mass.....1887
BEARD, DANIEL C., 191 Broadway, New York City.....1887
*BECKHAM, C. W., Smiths. Inst., Washington, D. C.....1883
BENNER, FRANKLIN, 16 South 4th St., Minneapolis, Minn.....1883
BENSON, Lieut. H. C., U. S. A., West Point, N. Y.....1886
BERIER, DELAGNEL, Bay Ridge, Kings Co., N. Y.....1885
BISHOP, Dr. LOUIS B., Box 235, New Haven, Conn.....1885
BOARDMAN, G. A., Calais, Maine.....1884
BOND, FRANK, Cheyenne, Wyoming Territory.....1887
BRANDRETH, FRANKLIN, Sing Sing, N. Y.....1886
*BREESE, WM. L., Islip, Suffolk Co., N. Y.....1888
BRODIE, Dr. WILLIAM, 325 Parliament St., Toronto, Can.....1885
BROWN, HERBERT, Tucson, Arizona.....1885
BROWNE, FRANK C., Framingham, Mass.....1883
BUTLER, AMOS W., Brookville, Ind.....1885
CAMP, ROBERT D., Box 726, Stamford, Conn.....1888
CHADBOURNE, Dr. ARTHUR P., Cambridge, Mass.....1883

*Deceased.

CHAMBERLAIN, C. W., 51 Lincoln St., Boston, Mass.....1885
CLARK, HUBERT L., Amherst, Mass.....1886
CLARK, J. N., Saybrook, Conn.....1885
COALE, H. K., 101 Washington St., Chicago, Ill.....1883
COBB, W. H., Albuquerque, New Mexico.....1888
*COE, W. W., Portland, Conn.....1883
COLBY, EDWARD A., 4130 Drexel Boulevard, Chicago, Ill.....1886
COLEMAN, GEO. A., London, Neb.....1888
COLLINS, Capt. J. W., Smiths. Inst., Washington, D. C.....1888
COMEAU, NAP. A., Godbout, P. Q., Can.....1885
CONKLIN, WM. A., Director of Menagerie, Central Park, New York City.....1885
COPE, ALBAN, Germantown, Pa.....1885
COUES, ELLIOTT BAIRD, Care Dr. E. COUES, Smiths. Inst., Washington, D. C.....1886
COUES, WM. PEARCE, 14 Ash St., Cambridge, Mass.....1888
COX, D. G., 367 Ontario St., Toronto, Can.....1888
COX, PHILIP, Newcastle, New Brunswick.....1887
DAENZER, CARL, 13 No. 3d St., St. Louis, Mo.....1888
DAVIS, EDWIN C., Box 277, Gainesville, Texas.....1888
DAVISON, J. L., Lockport, Niagara Co., N. Y.....1885
DAY, E. L., Buckhannon, W. Va.....1888
DELAFIELD, JOSEPH L., 475 5th Ave., New York City.....1888
DICKINSON, EDWIN, Springfield, Mass.....1885
DOAN, WM. D., Coatesville, Chester Co., Pa.....1885
DRAKE, JOHN N., Mutual Life Ins. Co., 32 Nassau St., New York City.1886
DREW, FRANK M., Genoa, Ill.....1885
DUREEE, OWEN, 46 Maple St., Fall River, Mass.....1887
DUTCHER, BASIL HICKS, 51 Liberty St., New York City.....1886
DYCHE, Prof. L. L., Lawrence, Kansas.....1886
EAMES, EDWIN H., Seymour, Conn.....1888
EDDY, N. A., 509 North Grant St., Bay City, Michigan.....1885
EDSON, JOHN M., Sinclairville, N. Y.....1886
ELLIOTT, S. LOWELL, 466 8th St., So. Brooklyn, N. Y.....1888
EMERSON, W. OTTO, Haywards, Cal.....1885
EMMET, WM. T., Pelham, Westchester Co., N. Y.....1885
EPPLEY, KURTZ, Orange, N. J.....1888
EVANS, EVAN M., Englewood, N. J.....1888
EVERMANN, Prof. B. W., Terre Haute, Ind.....1883
FAIRBANKS, Hon. FRANKLIN, St. Johnsbury, Vt.....1885
FANNIN, JOHN, Provincial Mus., Victoria, B. C.....1888
FISHER, WM. HUBBELL, 12 Wiggins Block, Cincinnati, Ohio.....1883
FLINT, H. W., Yale National Bank, New Haven, Conn.....1888
FORBUSH, EDW. H., 424 Main St., Worcester, Mass.....1887
FOX, Dr. WM. H., 1517 L. St., Washington, D. C.....1885
FURNESS, WALTER ROGERS, Wallingford, Delaware Co., Pa.....1888
GALE, DENIS, Gold Hill, Boulder Co., Colorado.....1886

*Deceased.

GAULT, B. F., 878 Washington Building, Chicago, Ill.....1885
GESNER, Rev. A. H., 22 East 131st St., New York City.....1885
GIBSON, LANGDON, Flushing, Queens Co., N. Y.....1887
GOODALE, Jos. L., 8 Craigie St., Cambridge, Mass.....1885
GOSS, B. F., Pewaukee, Waukesha Co., Wis.....1883
GRANT, U. S., 200 West 19th St., Minneapolis, Minn.....1885
GREEN, MORRIS M., Dept. Agl., Washington, D. C.....1887
GREGG, Dr. WM. H., 143 West 21st St., New York City.....1885
HANMER, C. C., Burnside, Conn.....1888
HARDY, Miss FANNIE P., Brewer, Maine.....1886
HARDY, MANLY, Brewer, Maine.....1883
HASBROUCK, EDWIN M., 138 So. Salina St., Syracuse, N. Y.....1887
HAUPT, LOUIS, 61 Liberty St., New York City.....1888
HAWLEY, A. H., 670 President St., Brooklyn, N. Y. 1886
HAZARD, R. G., 2d, Peace Dale, R. I.....1885
HEIMSTREET, Dr. T. B., 14 Division St., Troy, N. Y.....1888
HELME, ARTHUR H., Millers Place, Suffolk Co., N. Y.....1888
HENDRICKSON, W. F., Care the B. B. C. Co , 860 Broadway, New York City.....1885
HICKS, GEO. J., New Brighton, Richmond Co., N. Y.....1887
HICKS, HENRY, Westbury Station, Queens Co., N. Y.....1888
HICKS, JOHN D., Old Westbury, Queens Co., N. Y.....1888
HIGGINS, ALGERNON S., 1227 Fulton St., Brooklyn, N. Y.....1888
HOLBROOK, Judge S. T., Norwich, Conn.....1885
HOLMES, E. S., D. D. S., 103 Ottawa St., Grand Rapids, Mich.....1885
HOLTERHOFF, G., Jr., San Diego, Cal.....1883
HOLZINGER, JOHN M., (Curator Museum) State Normal School, Winona, Minn.....1887
HORNADAY, W. T., U. S. Nat. Mus., Washington, D. C.....1888
HOUGH, ROMEYN B., Lowville, N. Y.....1883
*HOWLAND, SNOWDON, Newport, R. I.....1883
HOY, Dr. P. R., Racine, Wis.....1883
HOYT, WM. H., Stamford, Conn.....1888
HURTER, JULIUS, 2346 So. 10th St., St. Louis, Mo.....1888
HVOSLEF, Dr. J. C., Lanesboro, Minn.....1885
INGALLS, CHARLES E., East Templeton, Mass.....1885
INGERSOLL, ALBERT M., Box 712, San Diego, Cal.....1885
JACKSON, THOS. H., West Chester, Pa.....1888
JAMES, HOWARD K., Courant Building, Hartford, Conn.....1888
JARDINE, CHAS. S., 318 East 39th St., New York City.....1888
JEFFRIES, WM. A., 78 Devonshire St., Boston, Mass.....1883
JENKS, Prof. J. W. P., 31 George St., Providence, R. I.....1888
JENNINGS, ALLEN H., 201 Oak Ave., Baltimore, Md.....1886
JOHNSON, ALBERT I., Hydeville, Vt.....1885
JOHNSON, FRANK, Parkville, Kings Co., N. Y.....1888
JOHNSON, LORENZO N., Evanston, Ill.....1888
JOHNSON, Prof. O. B., Seattle, Washington Territory.....1885

*Deceased.

JOHNSON, ROBERT W., Colorado Springs, Col.....1888
JONES, LYNDS, Grinnell, Iowa.....1888
JORDAN, A. H. B., Willsborough, Essex Co., N. Y.....1888
JORDAN, Prof. D. S., Bloomington, Ind.....1885
JOUY, P. L., Smiths. Inst., Washington, D. C.....1883
KENDALL, W. C., Freeport, Cumberland Co., Me.....1886
KEYES, C. R., Des Moines, Iowa.....1885
KING, Miss ELLEN, Great Neck, Queens Co., N. Y.....1888
KING, GEORGE GORDON, Newport, R. I.....1888
KNOWLTON, F. H., U. S. Nat. Mus., Washington, D. C.....1883
KOHN, GUSTAVE, 14 Carondelet St., New Orleans, La.....1886
*KUMLIEN, THURE, Milwaukee, Wis.....1883
LAMB, CHARLES R., Cambridge, Mass.....1885
LANTZ, Prof. D. E., Manhattan, Kansas.....1885
LAWRENCE, FRANK M., Moriches P. O., Suffolk Co., N. Y.....1888
LAWRENCE, ROBT. B., Mills Building, New York City.....1883
LAWRENCE, WM. M., 51 Liberty St., New York City.....1888
*LINDEN, Prof. CHARLES, Buffalo, N. Y.....1884
LLOYD, WILLIAM, El Paso, Texas.....1885
LOOMIS, JOHN A., Paint Rock, Concho Co., Texas.....1887
LOOMIS, LEVERETT M., Chester, S. C.....1883
LUCAS, FREDERIC A., U. S. Nat. Mus., Washington, D. C.....1888
MABBETT, GIDEON, Rodney, Jefferson Co., Miss.....1888
MACKAY, Prof. A H., Pictou, Nova Scotia.....1885
MACOUN, Prof. J., Geol. and Nat. Hist. Surv., Ottawa, Can.....1883
MARLATT, CHAS. LESTER, Manhattan, Kansas.....1888
MARSHALL, ALFRED, 43 Dey St., New York City.....1886
MASON, EDWARD C., Arlington, Mass.....1888
MATHERS, Dr. J. R., Buckhannon, W. Va.....1888
MERRIAM, Miss FLORENCE A., Locust Grove, Lewis Co., N. Y.....1885
MERRILL, HARRY, Bangor, Maine.....1883
METCALFE, WM. C., 21 Cortlandt St., New York City.....1886
MILLER, G. S., Jr., Peterboro, N. Y.....1886
MILLER, Mrs. OLIVE THORNE, 236 Greene Ave., Brooklyn, N. Y.....1887
MINOT, H. D., Care of St. Paul, Minneapolis and Manitoba R. R. Co., St. Paul, Minn.....1883
MOORE, J. PERCY, 1931 Judson Place, Philadelphia, Pa.....1886
MORCOM, G. FREAM, 870 North Park Ave., Chicago, Ill.....1886
MORRIS, GEO. SPENCER, Olney, Philadelphia, Pa.....1887
MORRIS, ROBT. O., Springfield, Mass.....1888
MORTIMER, BENJAMIN, Box 216, Sandford, Fla.....1888
MURDOCH, JOHN, Smiths. Inst., Washington, D. C.....1883
NICHOLAS GEORGE LAWRENCE, Mt. Sinai Hospital, Lexington Ave., N w York City.....1888
NORRIS, J. PARKER, 723 Walnut St., Philadelphia, Pa.....1886
NORTON, RICHARD, Cambridge, Mass.....1888
OBERHOLSER, HARRY C., Red Bank, N. J.....1888

*Deceased.

ONG, PLUMMER L., Clarence, Shelby Co., Mo.....1888
PAINE, AUGUSTUS G., Jr., Champlain Fibre Co., Willsborough, N. Y.1886
PALMER, T. S., Berkeley, Cal.....1888
PALMER, WM., U. S. Nat. Mus., Washington, D. C.....1888
PANNEPACKER, D. E., 2513 No. 12th St., Philadelphia, Pa.....1888
PARK, AUSTIN F., 31 Boardman Building, Troy, N. Y.....1885
PARKER, HARRY G., Chester, Delaware Co., Pa.....1886
PEACOCK, W. F., Marysville, Cal.....1888
PENNOCK, C. J., Kennett Sq., Chester Co., Pa.....1888
PERKINS, CHAS. E., Hartford, Conn.....1888
PETERSON, J. P., Luck, Wis.....1885
PIERS, ARTHUR, 288 St. James St., Montreal, Can.....1888
PINDAR, L. O., Hickman, Ky.....1886
PLEASANTS, J. H., Jr., 606 Cathedral St., Baltimore, Md.....1888
POPENOE, Prof. E. A., Manhattan, Kansas.....1886
RAGSDALE, G. H., Gainesville, Texas.....1885
RALPH, Dr. W. J., 26 Court St., Utica, N. Y.....1888
RATHBUN, FRANK R., 40 Franklin St., Auburn, N. Y.....1883
*RAWSON, CALVIN L., Norwich, Conn.....1885
RESSELL, CYRUS B., Ercildown, Chester Co., Pa.....1888
RICE, FRANK L., Evanston, Cook Co., Ill.....1886
RICHARDS, JOHN BION, 8 Barnaby St., Fall River, Mass.....1888
RICHARDSON, JENNESS, Am. Mus. Nat. Hist., New York City.....1888
RICHMOND, CHAS. W., U. S. Geol. Surv., Washington, D. C.....1888
RIECKER, ERNST, 900 So. 4th St., St. Louis, Mo.....1888
RIKER, C. B., South Orange, N. J.....1885
RILEY, Prof. C. V., U. S. Entomologist, Washington, D. C.....1885
RIVES, Dr. WM. C., Jr., Newport, R. I.....1885
ROBBINS, WM. A., 178 Garfield Place, Brooklyn, N. Y.....1888
ROBERTS, W. F., 503 E St., N. W., Washington, D. C.....1888
ROOSEVELT, THEODORE, Oyster Bay, Queens Co., N. Y.....1888
RUSSELL, GEO. C., 144 W. 7th St., Erie, Pa.....1888
SAGE, HENRY M., 1010 Chapel St., New Haven, Conn.....1885
SCOTT, W. L., 86 Sparks St., Ottawa, Can.....1883
SEE, ABRAM W., Arlington, N. J.....1888
SEITER, PHIL. J., 44 So. Main St., Waterbury, Conn.....1888
SHELTON, GEO. H., Seymour, Conn.....1888
SHORES, Dr. E. I., Soldiers' Home, Hampton, Va.....1883
SLADE, JOHN A., 1134 Herkimer St., Brooklyn, N. Y.....1888
*SMALL, EDGAR A., Hagerstown, Md.....1883
SMITH, HORACE G., Jr., 2918 Lafayette St., Denver, Col.....1888
SMITH, Dr. HUGH M., U. S. Nat. Mus., Washington, D. C.....1886
SMITH, S. SIDNEY, 59 Wall St., New York City.....1888
SORNBORGER, JEWELL D., Andover, Mass.....1888
SPELMAN, H. M., 62 Sparks St., Cambridge, Mass.....1883
SPRATT, Dr. G. R., Coatesville, Pa.....1887
STANTON, Prof. J. Y., Bates College, Lewiston, Me.....1883

*Deceased.

STEPHENS, E., Ballena, San Diego Co., Cal.....1883
STONE, WITMER, Fisher's Lane, Germantown, Pa.....1885
STUDER, JACOB H., 103 W. 14th St., New York City.....1888
SWIFT, EDWARD A., Elmira, N. Y.....1888
SWINBURNE, JOHN, St. Johns, Apache Co., Ariz.....1887
TALBOT, D. H., Sioux City, Iowa.....1885
TATLOCK, JOHN, Jr, Prudential Ins. Co., Newark, N. J.....1887
TAYLOR, ALEX. O. D., 124 Bellevue Ave., Newport, R. I.....1888
THOMPSON, ERNEST E., 86 Howard St., Toronto, Can.....1883
THOMPSON, FRANK J., Menagerie, Central Park, New York City.....1885
THORNE, Capt. PLATTE M., 22d Inf., U. S. A., Ft. Keogh, Montana..1885
THURBER, E. CARLETON, Alhambra, Los Angeles Co., Cal.....1886
TODD, LOUIS M., Calais, Me.....1887
TOPPAN, GEO. L., 138 Jackson St., Chicago, Ill.....1886
TORREY, BRADFORD, Melrose Highlands, Mass.....1883
TOWNSEND, C. H., Smiths. Inst., Washington, D. C.....1883
TREAT, WILLARD E., East Hartford, Conn.....1885
TROMBLEY, JEROME, Petersburg, Mich.....1885
TROTTER, Dr. SPENCER, Prof. Nat. Hist., Swarthmore College, Swarthmore, Pa.....1888
TURNER, Dr. M. H., Hammondville, Essex Co., N. Y.....1885
VAN CORTLANDT, Miss ANNIE P., Croton Landing, Westchester Co., N. Y.....1885
VELIE, Dr. J. W., Academy of Sciences, Chicago, Ill.....1886
*VENNOR, H. G., Montreal, Can.....1883
VERRILL, ALPHEUS H., 86 Whaley Ave., New Haven, Conn.....1888
VILARO, Dr. JUAN, Prof. Nat. Hist., Habana Univ., Habana, Cuba...1888
VOORHEES, CLARK G., 59 E. 75th St., New York City.....1888
WADSWORTH, D. S., Box 1061, Hartford, Conn.....1885
WAKEFIELD, J. R., Dedham, Mass.....1885
WALKER, Dr. R. L., Mansfield Valley, Pa.....1888
WARREN, Dr. B. H., West Chester, Pa.....1886
WEBSTER, FREDERIC S., 1345 Pa. Ave., Washington, D. C.....1886
WELLS, Dr. JOHN A., Englewood, N. J.....1888
WEST, LEWIS H., Roslyn, Queens Co., N. Y.....1887
WHEELER, DAVID E., St. Paul's School, Concord, N. H.....1888
*WILLARD, S. W., West DePere, Wis.....1883
WILLIAMS, ROBERT S., Great Falls, Montana.....1888
WINTLE, ERNEST D., 11 Hospital St., Montreal, Can.....1887
WOLFE, WALTER M., Box 162, Kearney, Neb.....1888
WOOD, A. H., Painted Post, N. Y.....1887
*WOOD, Dr. WILLIAM, East Windsor Hill, Conn.....1883
WOODRUFF, LEWIS B., Yale University, New Haven, Conn.....1886
WRIGHT, Capt. J. W. A., Livingstone, Ala.....1888
ZEREGA, LOUIS A., 111 East 72d St., New York City.....1884

*Deceased.